THE IRON TRADE REVIEW

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SOME CURTAILMENT,

BUT THE IRON MARKET IS NOT DEMORALIZED.

Sound Conditions Made Success of Capitalists Possible. — Southern Pig Iron Weak.—Rails Ordered for Japan.

The recent disturbances in the financial market very naturally retarded operations in the already dull iron trade, but there has been no general demoralization or alarm. In regard to the Westinghouse and other interests which have been placed in the hands of receivers, the prevailing feeling is that they will work out of their difficulties at a not far distant date, without loss to anyone. While no one attempts to belittle the splendid services which have been rendered by men of large capital in supporting the stock market and financial institutions, it should not be forgotten that such support would have been impossible had not the industrial condition of the country been sound and banks much better prepared to meet an emergency than they had been in past crises.

Curtailing Production

A considerable curtailment of production is expected to be a feature of November. Already the Columbus, O., plant of the Steel Corporation, consisting of two blast furnaces and a sheet bar mill, has been closed; the Edgar Thomson plant is running on short time; a number of independent blast furnaces are preparing to blow out, and some steel foundries and other concerns will undoubtedly reduce their output, but this reduction is expected to come slowly, and the idleness of plants, it is hoped, will not be necessary for a long period. Indications are not lacking that, owing to the excellent crops and activities of railroads, considerable buying will soon be imperative.

Pig Iron Very Quiet

The week has been exceedingly quiet in the pig iron market. The weakness of the southern product, noticeable especially in the Cincinnati district last week, is evident in other centers, and $15 is now talked of as the probable figure at which the southern product will be sold at Birmingham for next year's delivery. For this year's delivery, however, the price ranges from $17.00 to $17.50 for the large majority of transactions. Corrigan, McKinney & Co., an independent concern, will this week begin the manufacture of Bessemer iron at the Josephine, Pa., plant.

Heavy Specifications

On plates and sheets specifications have been very heavy in Chicago, aggregating 25,000 tons within a few days. While in some parts of the country the demand for structural material is fair, new work is slackening, and orders are not large or numerous in most places. There is still considerable shading of prices of bar iron, although the demand has improved somewhat, and the Cleveland mill, which was temporarily closed, has resumed operations. Steel bars are not active, and there is very little business in sheets. The agricultural demand for wire is very heavy.

Steel Rails for Japan

The principal orders for rails were for 12,000 tons placed in Chicago for the Northern Trans-Continental line, and 13,000 tons at Pittsburg for export to Japan. It is expected that orders for 30,000 tons additional for Japan will be placed.

Copper is Recovering

Copper has apparently touched the low mark and is now recovering as rapidly as the price declined. Sales of electrolytic for future delivery were made late Tuesday on the basis of 15c. Current stocks, it is stated, have practically been disposed of.

NEVER SO STRONG.

FINE SHOWING OF THE STEEL CORPORATION.

Judge Gary Issues Statement, Showing Sound Financial Condition and Favorable Prospects.

In connection with the quarterly meeting of the directors of the United States Steel Corporation, Tuesday, Judge E. H. Gary, as chairman, made the following statement to the board of directors:

"In view of the fact that there has been some recession in business during the last three months, which has resulted in numerous inquiries from stockholders concerning the affairs of our corporation, I feel justified in making to you a frank statement.

"On June 30, 1907, our companies had on hand unfilled orders aggregating 7,603.878 tons. On Sept. 30 this tonnage had been decreased to 6,425,008 tons. This has since been decreased by about 400,000 tons. The bookings in August were about 18,000 tons per day. In September they were about 20,000 tons a day. There were further increases during the first half of October; but since that time the bookings have decreased and are now at the rate of 18,000 tons per day for the month. We are exporting at the rate of about 1,000,000 tons per year, and at prices substantially on a parity with domestic prices.

"By way of comparison it will be remembered the unfilled orders on hand Sept. 30 of previous years were as follows:

1903	3,728,742
1904	3,027,436
1905	5,865,377
1906	7,936,884

Stocks Generally Low.

"From information received it is believed the demand for our products has during the last few years been constantly increasing, and that the present necessities are very great. This is especially true of the railroad corporations which, generally speaking, are sadly in need of additional transportation facilities to take care of the business which is offered. As a rule, the stocks on hand of our

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THE WEEK IN IRON CENTERS

PITTSBURG.

Production of Some Mills Reduced—Market is Very Quiet.

Office of THE IRON TRADE REVIEW,
521 Park Bldg., Oct. 29.

The situation as presented in the Pittsburg district during the past week is peculiar. In some directions mill records for production are being broken, while in others the output is being curtailed and the operations put on short time. None of the big plants has been shut down because of lack of business; all have some business ahead of them, but to carry it along as far as possible and tide over the slack period that has struck all buying, there has been considerable trimming, shifting and adjustment. Advantage is being taken of the situation to rebuild and repair. There has been very little cutting in prices, except on raw and semi-finished material. Contracts already on the books are being taken out in fairly good shape and there have been few cancellations. Jobbers' stocks in all lines are reported light, and the present condition is blamed entirely upon the financial situation. Reports to the effect that the Bellaire works of the Carnegie Steel Co. had been shut down indefinitely are untrue. The plant is still running on sheet bars. The Edgar Thomson plant has been "gaited" and is running on short time and business booked warrants the claim that it will have work ahead at least until the first of the year. By that time the railroads are expected in the market for next year's requirements. Japanese interests during the week placed a contract for 13,000 tons of standard rails and 30,000 tons more are expected.

The market is in a state of suspended animation. The house cleaning at financial centers has put it in a trance. Money, as everybody knows by this time, is so scarce in the Pittsburg district that the national treasury during the past week was called upon to make deposits in local banks in order that several of the big concerns could meet their pay rolls. To prevent a slaughter of stocks on the local exchange that institution has been closed for a week, but the situation is better now and the financial interests are drawing easier breaths.

Four of the Westinghouse interests were placed in the hands of receivers during the week on account of the scarcity of working capital, although it is admitted on every hand that the companies are perfectly solvent and have orders on their books that would keep them going to capacity for several months.

The readjustment to a slower gait after the high pressure of the past year is not all of a panicky nature and optimists as to the future outnumber the pessimists two to one, and the explanation given for the lull is that it takes time to make a readjustment. Manufacturers are leaning back and watching the horizon.

The only pig iron sale reported during the week was 1,000 tons of basic to a Cleveland interest, at $19.50 valley.

Corrigan, McKinney & Co. state that they have no thought of abandoning their plan to make Bessemer iron at their Josephine furnace, and have not asked for the cancellation of any contracts which have been made for such iron. The Josephine stack will be put on Bessemer Nov. 1.

Pig Iron.—The pig iron market is slow and listless, with practically no inquiry in the market, and the few odd tonnages sold during the week, aside from 1,000 tons of basic at $19.50 valley, were in carload lots for prompt delivery. Prices are nominal at best, and with the few transactions it is hardly fair to quote a market price, inasmuch as price inducements seem to be no incentive to stimulate buying and the lower the quotation the more determined prospective buyers seem to be to hold off until a later date in anticipation of a still further decline. Carload lots of northern No. 2 foundry iron have sold during the week at $21 delivered Pittsburg. Until the financial situation clears up and money becomes easier, there is little likelihood of any marked life being shown in pig iron. Southern foundry iron has been sold during the week at $17.75 Birmingham, and while there have been no sales of northern foundry iron in large lots upon which to base a quotation, there is reason to believe that $19 valley on a large tonnage will bring out the iron. Bessemer iron is still quoted at $22 valley, although no sales have been reported during the past week, and the inquiry of 10,000 tons reported last week has been withdrawn. There is no inquiry for next year's iron and under present conditions it is doubtful if furnace interests would make a quotation at this time. For delivery over the remainder of the year we quote as follows:

Bessemer, Valley	$22.00 to 22.25
Bessemer, Pittsburg	22.90 to 23.15
No. 1 Foundry, Pittsburg	21.65 to 22.15
No. 2 Foundry Pittsburg	20.40 to 20.90
Gray Forge, Pittsburg	19.90 to 20.40
Basic, Valley	19.50 to 20.00
Basic, Pittsburg	20.40 to 20.90

Ferro-Manganese.—There is no inquiry and prices are nominal as quoted for the past several weeks. We quote ferro-manganese, foreign, 80 per cent, at $55 to $56, delivered Pittsburg.

Imported 50 per cent ferro-silicon is quoted $100 to $102 Pittsburg, for prompt at $97 to $98 on forward deliveries, domestic, 12 per cent, $36; 11 per cent, $35; 10 per cent, $34. The lower grades of imported ferro-silicon are quoted 50 cents lower. These quotations are applicable to Pittsburg territory.

Plates.—Specifications against old contracts are coming in satisfactorily, although shipments are considerably in excess of these actual orders. The leading interest during the week took on an order for material for another lake vessel. The car companies are not submitting additional inquiries, as no new car business is being placed by the railroads. Reports of heavy car cancellations have been positively denied by all interested parties. There has been some talk of price cutting, but it is not general enough to affect the official card quotation. We continue to quote:

Tank plate, ¼-inch thick, 6¼ to 100 inches, 1.70c f. o. b. mill Pittsburg. Extras are as follows per 100 pounds: Boiler and flange steel plates, 0.10c; A. B. M. A. and ordinary firebox steel plates, 0.20c; still bottom steel, 0.30c; marine steel, 0.40c; locomotive firebox steel, 0.50c; all sketches, excepting straight taper plates varying not more than four inches in width at ends, narrowest end not being less than 30 inches, 0.10c; circles, 0.20c. Plates in width over 100 inches up to 110 inches, 0.05c; over 110 inches up to 115 inches, 0.10c; over 115 inches up to 120 inches, 0.15c; over 120 inches up to 125 inches, 0.25c; over 125 inches up to 130 inches, 0.50c; over 130 inches, 1.00c. Gages under ¼-inch to and including 3/16-inch plate on thin edges, 0.10c; under 3/16 to and including No. 8, 0.15c; under No. 8 and including No. 9, 0.25c. Five cents extra for less than carloads. Terms, net cash in 30 days.

Sheets.—There is a little new business coming in from many quarters, but it consists of small quantities. There is no big buying. Specifications continue fair, and there are many rush orders for small lots. Price cutting still continues on black sheets, but this is largely by way of giving away freight advantages by mills outside of base territory, and nearer the delivery point. We continue to quote as follows:

Black steel sheets, one pass, cold rolled, Nos. 11-12, 2.20c; Nos. 13-14, 2.25c; Nos. 15-16, 2.30c; Nos. 17-21, 2.35c; Nos. 22-24, 2.40c; Nos. 25-26, 2.45c; No. 27, 2.50c; No. 28, 2.60c; No. 29, 2.75c; No. 30, 2.85c; galvanized Nos. 10-11, 2.65c; Nos. 12-14, 2.75c; Nos. 15-16, 2.85c; Nos. 17-21, 3.00c; Nos. 22-24, 3.15c; Nos. 25-26, 3.35c; No. 27, 3.55c; No. 28, 3.75c; No. 29, 4.00c; No. 30, 4.25c; blue annealed, No. 10 and heavier, 1.85c; Nos. 11-12, 1.90c; Nos. 13-14, 1.95c; Nos. 15-16, 2.05c. Corrugated roofing, $1.90 per square for No. 28 painted, 2½-inch corrugation, and galvanized, $3.25 per square for No. 28.

Tin Plate.—The tin plate business is dull all along the line, and taken all together is anything but satisfactory from the manufacturer's standpoint. No large stocks are being accumulated by the mills, the feeling being that the money represented by such stocks could be used at this time to a much better advantage in other directions. As far as can be learned, there has been no shading in tin plate prices, and we continue to quote as follows:

Coke tin plate 100-pound basis, 14 x 20, $3.90 f. o. b. mill, Pittsburg district. Terms, 30 days, less 2 per cent for cash in 10 days.

Rails and Track Material.—The Carnegie Steel Co., through the Exports company during the past week, secured a contract for 13,000 tons of standard rails to be shipped to Japan, this order being placed with the Exports company through Japanese brokers in New York. It is understood there is about 30,000 tons more to be placed, but what mill will get them is still undecided. This contract calls for delivery over the next four or five months, but work on it will not be started until the first of the year. Aside from this contract, no other standard rail business was booked, and the tonnage of light rails during the week was about a thousand tons. The Edgar Thomson plant of the Carnegie Steel Co. has been put on a slower operating pace, and the daily production has been reduced about 35 per cent. On present specifications, we quote as follows:

Fifty-pound and heavier, 500-ton lots and over, $28; carloads and less than 500 tons, $30; less than carload lots, $32; 8-pound, $38; 12-pound, $34 to $37; 16-pound, $32; 20-pound, $31; 25 to 45-pound, $30; angle splice bars for standard sections, $1.65; standard spikes, $2 Pittsburg; hand spikes, $2.20 to $2.25 Pittsburg.

Steel.—The market on semi-finished steel is extremely quiet. Several independent producers who some time ago announced they had sold to capacity up to the first of the year, are now looking for December business. Prices are distinctly easier, and there will be no difficulty in getting Bessemer billets at $28 Pittsburg. The spread between Bessemer and open-hearth is gradually diminishing with the freer offerings of open-hearth steel which is now quoted at $29 Pittsburg. The leading interest has announced that it will maintain its price of $31 Pittsburg on sheet bars during the remainder of the year, but independent producers have already shaded their price or absorbed the freight, and are making the same quotation delivered at Pittsburg.

Hoops and Bands.—New business is extremely light and expired contracts are being renewed only from month to month, as mill shipments are good and buyers are holding off. Mills are holding prices firm and awaiting developments. We continue to quote:

Hoops in carload lots, 2c; in less than carload lots, 2.10c; bands, 1.60c; base half extras as per standard steel; cotton ties, 97½c per bundle.

Merchant Bars.—There has been no change in this market on merchant iron or steel bars during the past two weeks. Shading of $1 a ton has been reported on iron bars without denial, but a similar report on steel bars meets with a most emphatic denial on the part of manufacturers. The new business on both iron and steel bars is extremely quiet, and specifications against old orders are light. We quote as follows:

Common iron bars, 1.70c to 1.75c Pittsburg in carload lots and over, 1.75c to 1.80c in less than carloads; 1.60c base Pittsburg, plus freight to point of shipment on western deliveries; Bessemer steel bars, 1.60c net for future deliveries; 1.85c to 1.95c out of stock; plow and cultivator, 1.60c net; channels, angles, zees, tees, under three inches, 1.70c, all f. o. b. Pittsburg. The following differentials are maintained on steel: Less than 2,000 pounds, 0.10c advance; less than 1,000 pounds of a size, 0.30c advance. Cold rolled and ground shafting, 50 per cent off in carloads, and 45 per cent in less than carloads, delivered in base territory; open-hearth spring steel, 2.25c to 2.50c; sleigh shoe flats, 1.60c to 1.65c; smooth finished machinery steel, 1.90c to 2c; toe calk, 2.10c to 2.15c. The price of planished and machine straightened tire is 1.80c, base, half, tire extras. Iron finished tire up to 1½ inch and over to be sold on regular bar basis of 1.60c base, half extras, steel card.

Structural Material.—The building trade is running light and fabricating companies report inquiries few and far between, and for the most part involving very small tonnages. On this small business there is keen competition, construction companies being anxious to secure work, as business on the books is getting near the bottom and there is very little in sight. Conditions are not expected to improve until financial matters are straightened about. Material on old contracts is being taken out in good shape and as far as can be learned there has been no talk of shading the official prices. We quote:

Beams and channels, 15-inch, and under, 1.70c; over 15 inches, 1.90c; zees, 1.70c; tees, 1.75c; angles from three to six inches inclusive, 1.70c; over six inches, 1.80c; universal and sheared plates, 6¼ inches and wider, 1.80c base.

Merchant Pipe.—The pipe market is holding up in excellent shape, and there is no intimation of lower prices on steel pipe, although there has been some shading by eastern mills on wrought iron pipe. The volume of new business has decreased materially, although small tonnages are being placed almost daily with the manufacturers. This current business consists of odds and ends to fill out or balance stocks, and also includes a few extensions to line pipe improvements. We quote the following official discounts of the leading interest to consumers in large lots:

	—Steel—	
	Black.	Galv.
⅛ and ¼ inch	65	49
⅜ inch	67	53
½ inch	69	57
¾ to 6 inches	73	63
7 to 12 inches	70	55
EXTRA STRONG PLAIN ENDS.		
⅛ to ⅜ inch	58	46
½ to 4 inches	65	53
4½ to 8 inches	61	49
DOUBLE EXTRA STRONG PLAIN ENDS.		
½ to 8 inches	54	43

Boiler Tubes.—There is some little boiler tube business being placed, but the tonnage is not large. Old contracts are being taken out regularly

and prices are being well maintained. We quote the following discounts:

	Iron.	Steel.
1 to 1½ inch	42	47
1¾ to 2¼ inch	42	59
2½ inch	47	61
2¾ to 5 inch	52	65
6 to 13 inch	42	59

2¼ inches and smaller, over 18 feet, 10 per cent net extra.
2¾ inches and larger, over 22 feet, 10 per cent net extra.

Wire Products.—The demand for wire products continues heavy, and this one line of finished product is far in the lead as far as maintaining the volume of business on the books is concerned. The demand for barbed wire is not so heavy as that for plain and fence wire, while the demand for welded and woven wire fence continues at a top notch gait. Prices are firm and we continue to quote:

Wire nails, jobbers' carload lots, $2.05, retailers' carload lots, $2.10; less than carloads, $2.15; painted barb wire, $2.20 for jobbers in carloads; retailers in carloads, $2.25; and less than carload, $2.35; with 30c for galvanizing; plain wire, 1.90c for jobbers, and 1.95c by carload.

Coke.—The demand for furnace coke is not so heavy as it has been for the past few months, and the market consequently not so strong; this probably on account of several suspensions, by furnaces either going out of blast or such action being contemplated. More furnace coke is being offered, and we quote $2.75 to $2.85 at the ovens. There is a fair demand for foundry coke, and the tonnage being offered in the open market is not as heavy proportionately as in furnace coke, and on standard 72-hour Connellsville foundry we quote $3.25.

Old Material.—There is absolutely nothing going on in the scrap market. Prices have shown a still further tendency to decline, and price inducements have not been successful in bringing consumers of scrap into the market. We quote the following nominal prices, gross tons, delivered in the Pittsburg district:

Heavy melting scrap, $16 to $16.50; rerolling rails $17.50 to $18; bundled sheet scrap, $13 to $13.50; iron axles, $24.50 to $25; old iron rails, $20 to $21; No. 1 wrought scrap, $16 to $16.50; old car wheels, $23 to $23.50; low phosphorus scrap, $20 to $21; machine shop turnings, $12.50 to $13; cast borings, $11.50 to $12; No. 1 cast scrap, $18 to $18.50.

The boilermakers in the D. T. & I. shops at Jackson, O., walked out last week because a committee which had made complaint against a foreman were dismissed from the service of the company.

CHICAGO.

Reductions in Prices Freely Made to Get Business.

Office of THE IRON TRADE REVIEW,
1362 Monadnock Block, Oct. 29.

The actual decline in the strength of a variety of both raw and finished products during the week under review is not shown altogether by the nominal prices quoted and cannot be with any degree of accuracy because of the wide variation in reductions made to get business. Each transaction is a law unto itself, for where the selling interest is one whose books are well filled for the remainder of the year, the price of northern No. 2 foundry, for example, is liable to be $22.50 Chicago, or southern No. 2 $18.00 Birmingham, but sales have been made at as much as $1 below both of these figures, and it is by no means an impossibility that better than that could be done, particularly on southern iron under especially favorable circumstances. Weakness is also shown in iron and steel bars and sheets. Structural trade shows a continued suspension of new business, but a very good line-up of specifications. Wire products and tubular material maintain a uniformly healthy movement and are pretty well supported by a seasonal demand and well filled order books. Scrap continues weak.

Actual sales made during the week include 12,000 tons of rails and 2,500 tons of foundry iron, part No. 2 and part No. 4 southern. A sale of 7,000 tons of billets, not reported last week for lack of confirmation, was consummated. About 2,500 tons of structural steel was placed on two contracts, but a greater volume remains unsettled.

While the acute financial difficulties of the past week have not failed to influence the industrial situation in a measure, the mills and foundries of the western territory, especially in and west of Illinois, are operating, reports indicate, with unchanged activity. In this market confidence has suffered little disturbance.

Pig Iron.—The support which has held the southern pig iron market up to $18.00 and $18.50 Birmingham is weakening. Nominal quotations remain as a protection to old contracts, but $18 is the high mark which only the most urgent necessity for iron or some parallel condition would make possible. Orders for this year's delivery have been taken on the basis of $17.25 and $17.00 and there is good reason to believe that even this latter price would be shaded to encourage a possible customer. While there is no evidence of a toboganing of prices, a dozen different sales would probably be made at as many different prices within the range indicated above. Northern foundry iron, while scarcely in a similar condition, is somewhat weaker and $21.50 for No. 2 Chicago could probably be done. A Michigan consumer bought 500 tons during the week and 2,000 tons of southern made up of No. 2 and No. 4 was contracted for by J. B. Clow & Son. Specifications on contracts come in regularly, despite the lack of new business, and there is apparent no delaying of undertakings actually in progress. We have altered our prices and quote, Chicago delivery for the balance of the year, as follows:

Lake Superior Charcoal	$26.00 to 26.50
Northern Foundry No. 1	22.00 to 23.00
Northern Foundry No. 2	21.50 to 22.50
Northern Foundry No. 3	21.50 to 22.00
Southern Foundry No. 1	21.85 to 22.35
Southern Foundry No. 2	21.35 to 22.35
Southern Foundry No. 3	20.85 to 21.85
Southern Foundry No. 4	20.35 to 20.85
Southern No. 1 Soft	22.85 to 23.35
Southern No. 2 Soft	22.35 to 22.85
Southern Gray Forge	20.85 to 21.35
Southern Mottled	20.35 to 20.85
Southern Silveries, 4 per cent Silicon	24.35 to 24.85
Southern Silveries, 5 per cent Silicon	25.35 to 25.85
Southern Silveries, 6 per cent Silicon	26.35 to 26.85
Jackson Co. Silveries, 6 per cent	30.40
Jackson Co. Silveries, 8 per cent	32.40
Jackson Co. Silveries, 10 per cent	34.40
Malleable Bessemer	22.50 to 23.00
Standard Bessemer	22.15 to 22.65
Valley Basic	22.85 to 23.35
Alabama Basic	23.35 to 23.85

Billets and Rods.—The Standard Forgings Co. last week contracted for 7,000 tons of billets from an eastern independent mill. This was reported in some channels a week ago as a 10,000-ton lot, but could not be confirmed at that time. A weaker condition apparently prevails, however, in billets and there has been but little trading even in small lots. Inquiries are in somewhat smaller volume and good delivery from the east can be given on new business. We quote forging billets from $34 to $36 Chicago. F. o. b. Pittsburg, we quote rolling billets $28 to $29; Bessemer wire rods, $37; open-hearth rods, $38; and sheet bars, $31.00 to $31.50.

Merchant Bars.—The nominal quotation for iron bars remains at 1.78c Chicago, but there is little doubt that this price can be shaded on almost any kind of business. Steel bars also are weak. Inquiry remains in normal volume. Business in shafting presents no new features. There is a fair demand for machinery steel in small lots and trading continues to be characterized in these products as in all others by buying to cover absolute needs only. Prices have not been changed from a week ago and we

quote, carload lots, Chicago delivery, as follows:

Bar iron, 1.78c; soft steel bars and bands, 1.78c, half extras; soft steel angles, less than 3 x 3, 1.88c; hoops, 2.18c base, full extras; planished or smooth finished tire steel, 1.98c; iron finish, up to 1½ x ½ inch, 1.93c base; iron finish, 1½ to 1½ inch and larger, 1.78c base; channel for solid rubber tire, ¾ to 1 inch, 2.28c, and 1⅛ inch and larger, 2.18c; smooth finished machinery steel, 2.18c; flat sleigh shoe, 1.83c; concave and convex sleigh shoe, 1.93c; cutter shoe, 2.36⅛c; toe calk steel, 2.33c; railway spring, 1.98c; crucible tool steel, 7c to 9c, with higher prices asked on special grades. Quotations on shafting are 54 per cent off the list f. o. b. Pittsburg for carload lots, and 48 per cent off for less than carload lots. On iron and steel bars from local stocks, we quote as follows: Bar iron, 2.25c, full extras; soft steel rounds, and square, 3-inch and larger, $2 per 100 pounds base; flats, 2 inches to 4 inches by ⅛ inch and larger, $2 per 100 pounds base; 4½ inches by 5 inches and 6 inches by 5/16 inch and thicker, $2 per 100 pounds base; all ovals, half rounds, $2 per 100 pounds base; steel bands, $2 half extras; soft steel hoops, $2.50 full extras. Other sizes not mentioned above, $2 per 100 pounds base, plus half extras.

Plates.—The week in plate business has been featured by the splendid specifications on old contracts. A single specification to one producer comprising a list of structural material and plates, mostly plates, aggregated 25,000 tons and called for sizes that were more than unusual in their desirability. The lack of new business is not felt with equal keenness in all directions, for, in contrast to the well filled order books of the leading producer, there are indications of possible weakness elsewhere. We quote, however, without change:

Plates, ¼ inch and heavier, 6¼ to 100 inches wide, either universal or sheared, 1.70c Pittsburg base. For extras see Pittsburg report. Freight rate to Chicago, 18c per 100 pounds for carload lots, and 21c for less than carload lots. Jobbers' prices for shipment from local stocks are as follows: Tank steel, ¼ inch and heavier up to 72 inches wide, 2.20c; 3-16 inch up to and including 60 inches wide, 2.30c; 3-16 inch, 72 inches wide, 2.55c; No. 8 up to 60 inches wide, 2.40c. Flange steel, 25c extra; heads, 25c extra.

Sheets.—The decline in prices recorded a fortnight ago does not now fully cover the weakness in this product. No further reductions in price are quoted, but there is an almost complete lack of new business and present quotations can undoubtedly be shaded. Mills are making splendid shipments and the situation permits of a constant improvement in deliveries. We quote:

Black sheets, Nos. 8, 9 and 10, 1.90c Pittsburg; No. 28, 2.60c Pittsburg. Galvanized sheets, No. 28, 3.75c Pittsburg. Freight to Chicago, 18c per 100 pounds for carload lots, and 21c for less than carload lots. Jobbers' prices on carload lots and less from store are as follows:

No. 10, 2.40c to 2.45c; No. 12, 2.45c to 2.50c; No. 14, 2.50c to 2.55c; No. 16, 2.60c to 2.70c; Nos. 18-20, 2.70c to 2.80c; Nos. 22-24, 2.75c to 2.85c; No. 26, 2.80c to 2.90c; No. 27, 2.85c to 2.95c; No. 28, 2.95c to 3.05c; No. 30, 3.25c to 3.35c. Galvanized sheets, Nos. 10 to 20, 3.30c to 3.35c; Nos. 22 and 24, 3.60c to 3.70c; No. 26, 3.80c to 3.85c; No. 27, 4c to 4.10c; No. 28, 4.20c to 4.30c; No. 30, 5.35c to 5.40c.

Structural Steel.—The contract for the Hotel Mont Leone in New Orleans went to Milliken Bros. for $76,000, erected. About 1,200 tons were involved. The bids for the Delgado Hospital were rejected as being too high. The Auditorium Hotel at Milwaukee and the business pending in San Francisco are still hanging fire. The contract for the Kinzie street bridge, Chicago, was let to John J. Gallery, contractor, carrying 1,000 tons and the consideration was $99,500. Inquiries continue very good, but the above represents practically all the business immediately in sight, though a large tonnage would probably come into the market were it not for financial conditions which have completely tied up much prospective work. Specifications continue to come in with no evidence in this territory, particularly west of Chicago, of a suspension of operations already under way. We quote:

Beams and channels, 3 to 15 inches inclusive, 1.70c Pittsburg. For extras see Pittsburg report. Freight rate from Pittsburg to Chicago, 18c per 100 pounds for carload lots, and 21c per 100 pounds for less than carload lots. Quotations from store are as follows:

All angles, three inches and larger, including six inches, $2.05 per 100 pounds; angles, over six inches, $2.15 per 100 pounds base; beams, 3 to 15 inches inclusive, $2.05 per 100 pounds base; channels, three inches and larger, $2.05 per 100 pounds base. Less than carload lots are $1 a ton higher than foregoing prices.

Rails and Track Supplies.—A northern trans-continental railroad placed this week with the leading producer an order for 12,000 tons of rails, which was the only transaction of note. Frogs and switches, however, are sold in quantity, as are also spikes and bolts, and inquiry for these is on the basis of immediate shipment. The delays which present conditions are forcing on the railroads in the matter of buying rails are in defiance in many instances of pressing needs and sooner or later considerable buying must be done. We quote without change from a week ago:

Bessemer rails, $28 to $30; less than 500-ton lots, $32; open-hearth rails, $29; light rails, Bessemer, 25 to 45-pound sections, $32; 20-pound, $33; 16-pound, $34; 12-pound, $35; and lighter sections down to 8-pound, $42, all f. o. b. mill. Track supplies vary in price according to quantity and delivery. On orders accompanying rail contracts for future delivery, we quote, f. o. b. Joliet: Angle bars, 1.65c; spikes, 2.00c to 2.10c; bolts with square nuts, 2.50c to 2.60c; with hexagon nuts, 2.75c. For carload lots or less, for prompt shipment, the following prices are asked: Angle bars, 2.25c to 2.75c; spikes, 2.40c to 2.50c; bolts with square nuts, 2.85c; with hexagon nuts, 3c.

Cast Iron Pipe.—The week has been above the average in the quantity of small orders received, but there have been no tonnages of any size available or placed. While the situation would not make a slight reduction in prices in the near future unlikely, we are continuing to quote 4-inch water pipe $37; 6 and 8 to 12-inch, $36; larger sizes, $35; gas pipe, $1 a ton higher.

Merchant Pipe and Boiler Tubes.—Mill shipments, which are as much as three months behind on some sizes of pipe, are being rushed to the limit. New business is in very satisfactory quantity. Orders on the books of the principal producer are, however, much diminished from the volume of six months ago, due as much to the seasonable dullness of the early part of the last half and the tremendous output of the mills as to the lack of orders for future delivery. Very small stocks are being carried in the trade and the routine business has in prospect no cessation from the present activity.

We quote mill discounts, Chicago delivery, carload lots, as follows: On steel pipe, jobbers are allowed a concession of one point and five per cent additional from the schedule in force:

MERCHANT PIPE.

	—Steel— Black.	Galv.
¼ to 6 inches, inclusive.....	71.2	61.2

BOILER TUBES.

	Steel.	Iron.
2¼ to 3 inches, inclusive....	62.2	49.2

Mill quotations on iron pipe are from four to five points higher than above. A concession of one point from the following quotations is allowed by Chicago jobbers on carload orders for shipment from local warehouse stocks. We qoute for less than carload lots as follows:

MERCHANT PIPE.

	Black.	Galv.
⅛ to ¼ inch	61	45
⅜ inch	63	49
½ inch	65	53
¾ to 6 inches	69	59
7 to 12 inches	65	50

Minimum prices for wrought iron pipe, carload lots or greater, from Chicago stocks, are as follows: ⅛ inch to ¼ inch, 55; ⅜ inch, 57; ½ inch, 59; ¾ inch to 6 inches, 64; 7 inches to 12 inches, 59. Boiler tubes from store are unchanged at 60 off for steel, 47½ for iron, and 42½ for seamless, base sizes, 2⅛ inches to 5 inches.

Wire Products.—Agricultural demand for fence wire is very active at present, creating a brisk trade in barb wire and smooth wire. Supplies to hardware jobbers are being sold without abatement in quantity and there is no present evidence of approaching weakness in wire products generally. Prices in the west are well maintained and rumors of shading in the east have no noticeable effect in this locality. We quote jobbers, Chicago delivery, as follows:

Wire nails, $2.23; painted barb wire, $2.38; galvanized barb wire, $2.68; smooth annealed wire, $2.08; smooth galvanized wire, $2.38; polished staples, $2.23; galvanized staples, $2.63. Carload lots to retailers, 5 cents higher; less than carload lots, 15 cents higher.

Coke.—The coke situation retains the firmness which has characterized it in this market, and the quantity of trading continues in fair volume with no transactions of note to feature it. We quote Connellsville 72-hour foundry coke $3.25 to $3.40, and for high grade standard Connellsville furnace coke, $2.85 to $3.00 at the ovens.

Old Material.—Not even desultory trading in scrap has engaged the attention of dealers during the week under review. The list of the Chicago, Burlington & Quincy was disposed of in part by exchange. Prices generally are easier and we quote them correspondingly lower. Further reductions seem inevitable and a continuation of the dullness is probable until the end of the year. We have changed our prices and quote gross tons in the first paragraph, as follows:

Old Car Wheels	$24.50 to 25.00
Old Iron Rails	19.75 to 20.25
Rerolling rails (3 ft. and over)	16.50 to 17.00
Old Steel Rails (3 ft. and under)	16.00 to 17.00
Light Section Relayers, 45 lbs. and under, subject to inspection	30.00 to 32.00
Relaying Rails, subject to inspection	28.00 to 30.00
Frogs, Switches and Guards	14.00 to 14.50
Heavy Melting Steel	14.00 to 14.50

We quote net tons as follows:

No. 1 R. R. Wrought	$14.00 to 14.50
No. 2 R. R. Wrought	13.00 to 13.50
Knuckles, Couplers and Springs	14.00 to 14.50
Shafting	17.50 to 18.00
Iron Car Axles	22.50 to 23.00
Steel Car Axles	20.00 to 20.50
Dealers' Forge No. 1	11.50 to 12.00
Pipes and Flues	11.00 to 11.50
No. 1 Cast, 150 lbs. and less	15.50 to 16.00
No. 1 Mill	9.00 to 9.50
Mixed Busheling (Nos. 1 and 2)	9.75 to 10.25
Country sheet	8.00 to 8.50
No. 1 Boiler Cut	10.00 to 10.50
Boiler Punchings	14.00 to 14.50
Cast Borings	8.25 to 8.75
Mixed Borings, etc	8.25 to 8.75
Machine Shop Turnings	10.00 to 10.50
Railroad Malleable	14.00 to 14.50
Agricultural Malleable	13.25 to 14.00
Stove Plate and Light Cast Scrap	14.00 to 14.50
Old Iron Splice Bars	16.50 to 17.00

D. and G. Kaufman, formerly identified with L. K. Hirsch & Co., in charge of its Chicago office, dealers in iron and steel scrap, billets, pig iron, relaying rails and railway equipment, have organized a company under the name of D. & G. Kaufman, with offices at 549 Rookery building, Chicago, to handle the same lines of material formerly dealt in by L. K. Hirsch & Co.

CLEVELAND.

Steel for New Boat Placed—Iron Mill Resumes.

Office of THE IRON TRADE REVIEW,
Browning Bldg., Oct. 29.

Iron Ore.—Throughout the month of October the movement of iron ore from the Superior ranges has continued at a steady gait, and it is confidently expected that at least 6,000,000 tons will represent the month's shipment. The Steel Corporation's fleet has brought down in October a larger tonnage than in September, and other shipping interests have fared almost as well. The shortage of cars continues to hamper operations, but much ore is going on docks. Inquiries for ore are rare, and nothing is yet being done with next year's contracts.

Pig Iron.—The past week has been one of exceeding quiet in pig iron, and the prospective buyers who had been sounding the market appear to have been temporarily silenced by the financial flurry in the east. No inquiries of note for next year have appeared within the week. Prices are largely nominal, each of the few small sales practically constituting a market of itself, but No. 2 foundry for spot and last quarter delivery seems to be ranging about the price of $21 Cleveland. A little more anxiety over next year's business is being shown by some furnace interests, but generally operators appear contented to let the market take its course. Iron on contracts is being accepted regularly, and no cancellations are reported. The shortage of cars is causing some trouble in transporting material to furnaces. We quote, f. o. b. Cleveland, for the remainder of the year as follows:

Bessemer	$22.90
No. 1 Foundry	21.50 to 22.00
No. 2 Foundry	21.00 to 21.50
No. 3 Foundry	20.00 to 21.00
No. 2 Southern	21.35 to 21.85
Gray Forge	20.00 to 20.50

Coke.—Inquiries for coke, especially foundry coke, continue well and the market is very firm. Considerable business is being booked for delivery over the last quarter of this year and the first half of next year. Furnace coke appears less active than foundry, as the foundries are taking shipments on existing contracts very readily. We quote high grade furnace coke at from $3 to $3.15 ovens for the remainder of the year and from $2.90 to $3 ovens for the first half, and foundry coke at from $3.25 to $3.50 ovens for last quarter and first half.

Finished Material.—An order for the plates and shapes for a new freighter to be built by the American Ship Building Co. was placed within the week. Other boat steel business is in prospect. New business is only fair, although some companies report surprisingly good conditions in this respect, especially in structural and steel bars. Specifications are not heavy. Buyers are showing a great deal of caution in view of the unsettled financial conditions, and are closing only for actual requirements. Plate business is not so active as several weeks ago, and some producers are making a more vigorous canvass for orders. Premium business has entirely disappeared. Bar iron is no stronger, although some business, principally from railroads, has been obtained in the week. The mill of the Empire Rolling Mill Co., in this city, which closed down a week ago, has resumed operations. Occasional activity is being shown by light rails. Structural material is in good demand, and there is little change in the sheet situation. Jobbers' mill business is fair and stock trading continues good.

Old Material.—There is very little demand for old material, and the market is ruling weaker. Dealers are cleaning up their contracts as fast as possible, preliminary to assuming a waiting attitude, as it is anticipated that an extended dull period is before them. The Lake Shore railroad is

offering a lot of from 3,000 to 4,000 tons, and the Erie is also asking for bids on a list. We have revised our prices, and quote, f. o. b. Cleveland, gross tons, as follows:

Old iron rails	21.00 to 21.50
Old steel rails (re-rolling)	16.50 to 17.50
Old steel rails (under 6 feet)	16.50 to 17.50
Old car wheels	21.50 to 22.50
Steel boiler plate	13.50 to 14.00
Steel axles	20.00 to 21.00
Malleable iron (railroad)	16.00 to 16.50
Malleable iron (agricultural)	14.00 to 14.50
Heavy steel	14.50 to 15.00
Country mixed steel	12.50 to 13.00
Low phosphorus	19.00 to 20.00
We quote net tons as follows:	
No. 1 R. R. Wrought	14.50 to 15.00
No. 1 busheling	12.50 to 13.00
No. 1 machine cast	16.00 to 16.50
Iron axles	21.00 to 22.00
Axle turnings	11.00 to 11.50
Machine shop turnings	9.50 to 10.00
Grate bars	13.00 to 13.50
Pipes and flues	12.00 to 12.50
Tank iron	11.50 to 12.00
Hoop and band iron	7.50 to 8.00
Sheet iron	6.00 to 7.00
Wrought drillings	9.50 to 10.00
Stove plate	13.50 to 14.00
Cast borings	8.00 to 9.00

CINCINNATI.

Fifteen Dollar Iron Discussed—No Important Sales Made.

Office of THE IRON TRADE REVIEW,
First National Bank Bldg., Oct. 29.

Pig Iron.—The market continues quiet. Inquiry is limited to small tonnages for this year's delivery. Sales of southern iron have been made at $17.00 Birmingham, and northern iron has been quoted at $19.00 for No. 2 foundry at furnace. These figures are regarded as minimum. The situation is irregular and some furnaces are holding for $18.50 Birmingham for No. 2 foundry, and northern makers are asking in some cases $20.50 for No. 2 at furnace. Resale iron is practically making the market, although a few furnaces are meeting the resale prices. The low grades are easy and dull. Gray forge is obtainable at $15.00 and No. 4 foundry at $15.50 Birmingham.

Sales made, while consisting of moderate tonnages, were slightly more numerous than in the preceding week, but there were no transactions of importance. Inquiry for next year is nil, and, with nothing in the way of business in this direction to bring out quotations, it is difficult to offer definite figures. As a matter of trade talk it may be said that buyers express the belief that $15.00 Birmingham would be a price that would interest them for the first quarter, and the furnace interests, while not conceding the probability of the market going to that figure, regard it as a fairly favorable indication as showing a confidence on the part of melters that $15.00 would be a safe basis, and in this way marking a minimum below which it is not reasonable to expect the market to recede. The policy of most of the furnaces, as reflected through the sales agencies here, is to let the market drift and wait developments. From the best information at hand, it is not believed that much high grade iron is being piled either in the north or south, and with shipments going forward on contracts, and but little free tonnage to offer for the next two months, furnaces assume the position of waiting a resumption of buying. We quote for prompt shipment and this year's delivery, delivered Cincinnati, as follows:

Southern Foundry No. 1	$20.75 to 21.25
Southern Foundry No. 2	20.25 to 20.75
Southern Foundry No. 3	19.75 to 20.00
Southern Foundry No. 4	18.75 to 19.25
Southern No. 1 Soft	20.75 to 21.25
Southern No. 2 Soft	20.25 to 20.75
Southern Gray Forge	18.25 to 18.75
Northern No. 1 Foundry	20.70 to 21.70
Northern No. 2 Foundry	20.20 to 21.20
Northern No. 3 Foundry	19.70 to 20.20

Finished Material.—The tendency to defer placing contracts in the iron and steel lines is making mill business light and is stimulating the retail trade from the stores in the way of buying small lots to fill in on current needs. Small orders are filled here at the following prices:

Angles, 3 x 3 and over, 2.15c to 2.25c; beams and channels, 15 inches and under, 2.15c; small angles and architectural channels, 2.10c base; plates ¼ inch and heavier, 2.10c; 3-16 inch, 2.20c; No. 8, 2.20c; sheets (blue annealed) No. 10, 2.30c; No. 12, 2.35c; No. 14, 2.40c; No. 16, 2.50c; box annealed sheets, Nos. 18 and 20, 2.65c; Nos. 22 and 24, 2.75c; Nos. 25 and 26, 2.80c; No. 27, 2.85c; and No. 28, 2.95c. Iron and steel bars, $2 base; boiler tubes, 62 per cent off base; turnbuckles, 45 per cent off; rivets, 3.15c base; cold rolled shafting, 45 per cent off list; steel tire, 2.10c base.

Coke.—There is no change in the market and spot coke is being disposed of without difficulty at current quotations. There is but little interest shown in next year's contracts and figures have not yet been established. Prices in the leading coke producing districts are as follows:

Wise County furnace coke	$2.85 to 3.00 per ton
Wise County, Va., Foundry Coke	3.00 to 3.25 per ton
Pocahontas Furnace Coke, prompt shipment	2.60 to 2.75 per ton
Pocahontas Foundry Coke	3.00 to 3.25 per ton
Connellsville Furnace Coke, prompt shipment	2.85 to 3.00 per ton
Connellsville Foundry Coke	3.25 to 3.50 per ton
New River Foundry Coke, prompt shipment	3.35 to 3.50 per ton
New River Furnace Coke, contract	2.85 to 3.00 per ton

Old Material.—The market is weak and quotations are lower under lack of demand. We quote dealers' prices as follows:

Old No. 1 R. R. wrought, net tons	$15.00 to 15.50
Cast machine and fdy., net tons	16.50 to 17.00
Old iron rails, gross tons	21.50 to 22.00
Old steel rails (re-rolling) gross tons	17.00 to 18.00
Old short lengths, gross tons	17.00 to 18.00
Old iron axles, net tons	21.50 to 22.50
Heavy melting scrap, gross tons	16.50 to 17.00
Stove plate, net tons	13.50 to 14.50
Wrought turnings, net tons	10.00 to 10.50
Cast borings, net tons	9.50 to 10.00
Car wheels, gross tons	22.00 to 23.00

PHILADELPHIA.

Very Little New Business—Furnaces Will Be Blown Out.

Oct. 29.

Pig Iron.—So far as actual business is concerned, the past week has been a very quiet one. The shadow of New York's financial troubles has naturally hung over the market, and while no direct effects have been felt in the iron and steel trade of this vicinity, the tendency has naturally been to confirm buyers in their waiting policy. The sales made have been small in the aggregate and largely in carload lots for prompt shipment. Reports from the foundries show that while many of them are still busy on old orders, they are getting very little new business, and it is therefore only natural for them to pursue a most conservative course in buying. If they are to continue in business after Jan. 1, as it is natural to suppose nearly all of them will, a great deal of iron must be bought in the next two months, and the producers are expecting this movement to steady prices. Recent conferences of furnace men in eastern Pennsylvania have made it plain that they will not run their plants at a loss. Eight furnaces at least have been put out of blast, or some of them soon will be, and if there is no improvement with the new year, more of them will be blown out. In view of the high prices of labor, fuel and ore, some furnace men claim that they are already selling their products at a loss, and arrangements are being quietly made to so adjust matters, where a company operates several stacks, as to put the more expensive furnaces out of operation and keep them out until the pendulum swings back to the point where they can again be run at a fair profit. Gray forge is scarce because of the recent heavy demands of pipe foundries and mills, but there is no difficulty in securing the other grades. Prices, which vary considerably according to the purchaser, may be quoted as follows:

Insert Pig Iron Prices.

No. IX Foundry	$20.50 to 21.00
No. 2X Foundry	19.50 to 20.25
No. 2 Plain	19.25 to 19.75
Standard Gray Forge	18.00 to 18.50
Basic	18.25 to 18.75
Low Phosphorus	27.00 to 27.50

Finished Material.—New business has fallen to the lowest point, apparently, and only the old orders booked some months ago keep the

mills busy. No change has been made in prices, which are nominally what they have been for several months.

Old Material.—The mills are buying only such scrap as is absolutely necessary, and the market is exceedingly weak, with prices lower than they have been for a long time. Speculative dealers are holding on to their old material in the hope of better prices, but the immediate outlook is not considered very bright. Cast borings, which are now down to $10 a ton, have been especially weak, but nearly all grades show heavy losses. Prices may be quoted as follows:

Old steel rails	$16.00 to 17.00
No. 1 steel scrap	14.75 to 15.25
Old steel axles	20.25 to 20.75
Old iron axles	25.50 to 26.00
Old iron rails	18.75 to 19.25
Old car wheels	22.00 to 23.00
Choice scrap R. R. No. 1 wrought	17.50 to 18.00
No. 1 yard scrap	16.00 to 16.50
Machinery scrap	17.50 to 18.00
Low phosphorus scrap	20.00 to 20.50
Wrought iron pipe	13.00 to 14.00
No. 1 forge fire scrap	13.50 to 14.00
No. 2 forge fire scrap, ordinary.	10.00 to 10.50
Wrought turnings	13.00 to 13.50
Axle turnings, heavy	13.50 to 14.00
Cast borings	10.00 to 10.50
Stove plates	14.00 to 14.50

NEW YORK.

Collections Are Light—Failures Do Not Cause Alarm.

Office of THE IRON TRADE REVIEW,
Room 1005, No. 90 West St., Oct. 29.

There is a general complaint that the confused financial conditions of the past 10 days, with the consequent stringency of the money market, have made themselves felt very strongly in the matter of collections, these having been extremely light since the outbreak of serious trouble. That the position of the iron trade, however, is still very strong is evidenced by the little concern given the failure, during the crisis, of the Westinghouse companies, the Southern Steel Co., and the Atha Steel Casting Co. It is felt that, in the hands of receivers and free from the pressing claims of creditors, they will be able to work out in good shape. The closing of the Columbus plant of the United States Steel Corporation, consisting of two furnaces and a sheet bar mill, is merely the first recession movement of this interest. The Columbus plant, however, is a high-tide institution and has been operated only when business was most active, with occasional lapses during slack times.

Pig Iron.—In the local pig iron market there is no change to record. A few small sales of basic and foundry iron are reported, but with these exceptions the market is thoroughly quiet, inquiry being almost entirely absent. Foundry advices are that the melt is heavy and this statement is borne out by the fact that the few requests for delayed shipments are more than offset by the demand for antcipations on iron contracts. There is, however, no interest in next year's iron. Germany and Italy are still drawing heavily from British stores, which are now down close to the 100,000-ton mark. We quote, tidewater delivery, as follows:

Northern Foundry No. 1	$20.50 to 21.00
No. 2X Foundry	19.50 to 20.00
No. 2 Plain	19.00 to 19.50
Malleable	20.50 to 21.00
No. 2 Southern Foundry	**22.00 to 23.00**
Basic	18.50 to 19.00

Ferro-Manganese.—Some little business is being done, but on a slightly lower scale. The range of prices at tidewater is about $53.00 to $54.00 for early delivery, and $51.50 to $53.00 for next year.

Finished Materials.—New business continues extremely light. Architects and engineers throughout the district report orders for the cessation of work and it is apparent that the winter will be quiet. Prices are being held up largely because of the heavy volume of small, rush business recently placed for delivery before cold weather, but there is shading on small shapes, under three inches, and on steel bars. The American Bridge Co. expected to have total bookings of about 25,000 tons to show for its October efforts, this being almost entirely made up of small lots. Its mills, however, are being rushed as never before, purchasers are clamoring for deliveries, and it is pretty certain that the production record of this company will be materially hoisted during the month. The Postal Telegraph building in San Francisco, 750 tons, has gone to this interest. The Madison avenue bridge in New York, 1,200 tons, has not been let by the general contractor. A number of small lettings are reported, among them a bridge to the receivers of Milliken Bros. The steel rail controversy is still unsettled and the week has been without developments, but it is hoped something definite will come from Wednesday's meeting of the American Railway Association. Current rail business is unimportant. Bar iron mills are reported to be working actively, but the price tendency is downward. We quote:

Angles, 3 to 6 inches x ¼-inch and heavier, 1.86c; beams, 3 to 15 inches, 1.86c; tees, 3 x ¼-inch and heavier, 1.91c; plates, carloads, tank, 1.96c; marine boiler, 2.26c; bar iron, 1.76c; soft steel bars, 1.76c; sheets, No. 28, black, 2.60c.

Old Materials.—The current market is one of thorough inactivity, with mills inclined to buy sparingly only at their own figures and with the price level still sagging. Dealers report that melting concerns are closely inspecting all shipments and are holding them rigidly to contracts, at the same time cancelling contracts now and then. Heavy steel scrap is in weak demand. The only bright feature is that rolling mills are still running to capacity. We quote, New York delivery, as follows:

Old iron rails	**$24.50 to 25.00**
Old steel rails, rerolling	16.00 to 16.50
Relaying rails	24.00 to 26.00
Old car wheels	**22.50 to 23.00**
Old iron car axles	24.00 to 24.50
Old steel car axles	**19.00 to 19.50**
Heavy melting steel	13.25 to 13.50
No. 1 railroad wrought	17.00 to 17.50
Iron track scrap	15.50 to 16.00
Wrought pipe	**12.00 to 12.50**
Cast borings	8.50 to 9.00
Wrought turnings	11.25 to 11.50
Heavy cast scrap	15.00 to 15.50
Railroad malleable	**15.00 to 16.00**
Agricultural malleable	**15.00 to 15.50**
Stove plate	14.00 to 14.50
Grate bars	**13.00 to 13.50**

ST. LOUIS.

Pig Iron Dull—Good Outlook for Structural Material.

Oct. 28.

Pig Iron.—Business in the pig iron line is unusually light. The few orders that are received cover immediate shipments as a rule and at prices ranging from $17.50 to $18, Birmingham basis, for No. 2. A few large furnace interests are holding firm at $18, and they intimate that they are not anxious for business covering deliveries over the remainder of the present year. These same interests are offering iron for the first quarter of 1908 at $17.50, but some foundrymen assert that they can buy iron at $17. It is somewhat difficult to arrive at the exact market price, as reports are conflicting and there is little actual business being placed. It is evident that the furnaces are doing all in their power to give a strong tone to the market. Our quotations, f. o. b. Birmingham, to which $3.75 freight is to be added, follow:

No. 1 Southern	$18.00 to 18.50
No. 2 Southern	17.50 to 18.00
No. 3 Southern	17.00 to 17.50
No. 4 Southern	16.50 to 17.00

Coke.—Prices on foundry coke remain very firm with orders coming in in a most satisfactory manner for immediate and future shipment. Furnace coke probably has weakened slightly on account of a number of firms going out of operation. Smelter coke is something of a drug on the market at the present time, which is accounted for by a great many copper smelters having recently re-

duced their output. Our quotations are as follows: 72-hour foundry coke, f. o. b. Connellsville ovens, $3.50 to $3.75; 48-hour furnace coke, $2.75 to $3; smelter coke, $1.75 to $2. The freight to East St. Louis is $2.80 and to St. Louis, $2.90. Car shortage conditions continue to cause considerable inconvenience in the pig iron and coke districts, according to reports of St. Louis dealers.

Steel.—Buying is reported to be experiencing considerable delay pending a settlement of railroad rate specifications. Considerable business is manifested in light rails and at a slight reduction in prices. Specifications on contracts are said to be liberal, and orders in considerable number are being taken for prompt shipment. Architects report that there is plenty of work ahead and that they are busy drawing plans for store, dwelling and office structures. The most important building under consideration is an 18-story mercantile structure, to cost about $700,000. Mauran, Russell & Garden, architects, are making the plans, but are not at liberty to disclose the location of the building site. Plans and specifications are being made for structures entailing an expenditure of $1,462,900, among them a $40,000 station for the McKinley Electric Railway system.

Old Material.—The market is still reported dull, with tight money assigned as a cause. Our quotations remain as follows:

	GROSS TONS
Second-hand relaying rails, according to time of delivery	$29.00
Steel rails (less than 3 feet)	15.00
Car wheels	24.50
Re-rolling steel rails	17.00
Heavy melting steel	15.00
Country steel mixed	12.00
Iron rails	22.00
	NET TONS
No. 1 R. R. wrought	16.00
No. 2 R. R. wrought	15.00
Iron splice bars and fish plates	17.00
Iron car axles	24.50
Steel car axles	19.00
Iron shaftings (3 to 6 inches)	18.00
Country wrought	12.00
Locomotive tires, smooth inside	15.00
Pipes and flues	12.00
Heavy machinery	15.00
R. R. cast (less than 300 pounds)	14.50
No. 1 Busheling	13.00
No. 2 Busheling	12.00
Boiler sheet and rings	12.00
R. R. cast borings (free of inferior quality)	10.00
R. R. wrought turnings	13.50
Machine shop turnings (free from brass)	11.00
Railroad malleable	14.00
Agricultural malleable	14.00
Cast stove plate	11.00

The Santa Fe railroad, in connection with the erection of round house at San Bernardino, Cal., has awarded the contract for the construction of a new machine shop, 120 x 500 feet, which will greatly enlarge the capacity of the shops.

BUFFALO

Conservative Buying Movement Expected Soon—Market Quiet.

Office of THE IRON TRADE REVIEW, 932 Ellicott Square, Oct. 28.

Pig Iron.—Although the recent financial disturbances in the east have not helped the market, there seems to be no recession from the stand maintained by furnaces and buyers for the past several weeks. There is no cancellation of orders and while the business is still confined to small lots, it is progressing as satisfactorily as it has been for some time past. Most of the furnaces are pretty well sold up to the first of the year, and while they are keeping busy on old orders, some of them are inclined to blow out at the first opportunity.

Local representatives of valley and southern irons report no brisk movement in their territory, but assert that they are holding out for their prices in fairly good shape, and one valley furnace reports that it cannot ship any iron before Jan. 1.

The buyers, like the furnaces, are low in stocks, but both sides seem determined to withstand the strain until a turn in the market forces them together. Shading of prices is reported from some districts, but the general opinion locally is that no further concessions can or will be made, and that the long antcipated buying movement will begin shortly. Consumers are realizing this fact and inquiries for iron for delivery during 1908 are coming in more freely. It is generally believed that the trade is now on the very edge of the buying movement for 1908, but that it will be conducted on more conservative lines than ever before in the history of the trade for this season of the year. The curtailment in the heavy contracting for iron that is usual at this season of the year is, of course, attributed to the money situation, an actual falling off in business, and the reluctance with which some foundrymen pay their bills.

Instead of lowering the prices quoted for the past three weeks, the consensus of opinion permits us to quote practically the same scale as appeared in the last issue. But in some instances the sentiment prevails that these prices are too low. However, the gradual improvement noted in the market, and a heavy buying movement momentarily expected, permits us to quote for fourth quarter as follows:

No. 1X Foundry	$21.75 to 22.00
No. 2X Foundry	21.00 to 21.50
No. 2 Plain	20.75 to 21.25
No. 3 Foundry	20.50 to 20.75
Malleable Bessemer	22.00 to 22.50
Gray Forge	20.00 to 20.50
Charcoal	27.00 to 27.50

BIRMINGHAM, ALA.,

Furnaces Endeavoring to Keep Up Production—Iron and Steel Quiet.

Oct. 28.

Alabama iron furnaces are still working hard and efforts are being made to keep up the production to the highest notch. This speaks well for the confidence displayed by the Alabama manufacturers, for there is no denying that the iron mart has been very dull recently. Lap over orders are being rushed out as quickly as the iron can be produced and in some instances the consumers are urging delivery just as much as the makers are trying to get out the iron from the yards. There is no accumulation of iron at all in this district, save a few tons of the lower grades. A few sales of iron in lots ranging from one to three carloads were sold recently in this district, delivery during the last two months of the year. There is no selling going on for delivery during the first half of the coming year that can be heard of. Some inquiries are still reported, but no results are announced in the way of orders being placed.

Steel is also a little quiet in this district, though plants are working on full time. Old orders hold a goodly portion of the books of the various companies. The laying off of a number of hands in the construction department of the Tennessee Coal, Iron & Railroad Co. at Ensley in the steel plant caused some comment recently, but it is now stated that the men were let out for the reason that certain part of the work is nearing completion. Preparations are being made to put in operation some of the new steel plant.

BRITISH IRON MARKET

Lack of Confidence a Prominent Feature—Prices are Declining.

Office of THE IRON TRADE REVIEW, Prince's Chambers, Corporation St., Birmingham, Eng., Oct. 19.

Substantially, the conditions prevailing a week ago are unchanged. The principal feature is the lack of confidence in the future, which has weakened prices slightly, both in Cleveland and in the Midlands. This week Cleveland warrants have touched 53s 4½d ($13.07) which is not much above the minimum for the year. But there has been a little recovery. The significant feature is the downward tendency of quotations for future buying which are about 3s below present figures. Yet shipments keep up wonderfully well, and those of

October so far are, with two exceptions, namely, those of April and June, the highest for the year. It is perfectly clear that demand is still outstripping supply. Consumers also are clamoring for deliveries, especially in the Birmingham district, and some of the local forges have had difficulty to keep going. Yet quite recently 16 furnaces throughout the country have either blown out or damped down. Two furnaces at the Solway Iron Works, Maryport, belonging to Messrs. Cammell, Laird & Co., have ceased production, and several Midland firms are stopping their furnaces either for repairs or to reduce production. The greatest weakness is shown in the hematite district, although stocks are as low as they have ever been in the history of the trade. While coal and coke remain dear, there will be no great slump in prices, but some easing off is inevitable. Messrs. Guest, Keen & Nettlefold have erected two great furnaces at Dowlais, each of which is to turn out twice as much iron as those they are to replace. The general tendency is to regulate production in future according to requirements.

METAL MARKET.

NEW YORK.

Oct. 29.

Copper.—Active buying for foreign account early this week brought a turn in the long-continued decline and prices advanced appreciably. This may be only temporary, but is of importance as marking the first break in the slump. We quote as follows: Lake, 13½c to 14c; electrolytic, 13c to 13½c; casting, 12½c.

Pig Tin.—There is still a small premium on spot tin and the foreign market is distinctly stronger, but domestic consumers are evidently not expecting any immediate advance, as they are buying only for their immediate wants. Local prices are still tending downward, being now in the neighborhood of 31c.

Pig Lead.—No change has been made in the quotation of the leading producer, desilverized at New York being held at 4.75c, and at 4.67½c, St. Louis. Other producers, however, continue to sell as low as 4.55c, New York, and 4.45c, St. Louis.

Spelter.—There is no change, either in prices or in the volume of current business, which is still small. We quote 5.45c to 5.50c, New York, and 5.30c to 5.35c, St. Louis.

Antimony.—Cookson's is quotable at 11½c to 12c, Hallett's at 10c to 10½c, and ordinary brands at 9¾c to 10¼c.

CHICAGO.

Oct. 29.

The increase in the sale of copper, both for foreign and domestic consumption, has been marked and has had its effect on the strength of this metal in the Chicago market. Sales here have been in good volume. Other metals have been quiet with practically no change from prices quoted a week ago.

We have revised our prices and on carload lots, unless otherwise stated, quote as follows: Lake copper, 15½c to 16c; casting, 15c; pig tin, 35¼c to 35½c; spelter, 5.65c to 5.75c; pig lead, desilverized, 5c to 5.10c in 50-ton lots; corroding, 5.25c to 5.35c in 50-ton lots; car lots, 2¼c per 100 pounds higher; sheet zinc, 7.50c list, f. o. b. LaSalle, in car lots of 600-pound casks; Cookson's antimony, 13c to 14c; other grades, 12c to 13c.

The inquiry for old metals is considerably improved, and we quote:

Copper wire, 12c; heavy copper, 12c; light copper, 10½c; heavy red brass, 12c; heavy yellow brass, 8½c; light brass, 6½c; No. 1 red brass borings, 10c; No. 1 yellow brass borings, 7½c; brass clippings, 8½c; tea lead, 3½c; lead scrap, 3¾c; zinc scrap, 3¾c; zinc clippings, 4c; tin foil, 24c; tin pipe, 28c; pewter, 19c; aluminum clippings, 22c to 20c; aluminum cast scrap, 20c; electrotype plates, free from wood, 4½c; electrotype dross, 2½c; stereotype plate, 5c; stereotype dross, 2¾c; prime slab zinc dross, $72 per ton.

ST. LOUIS.

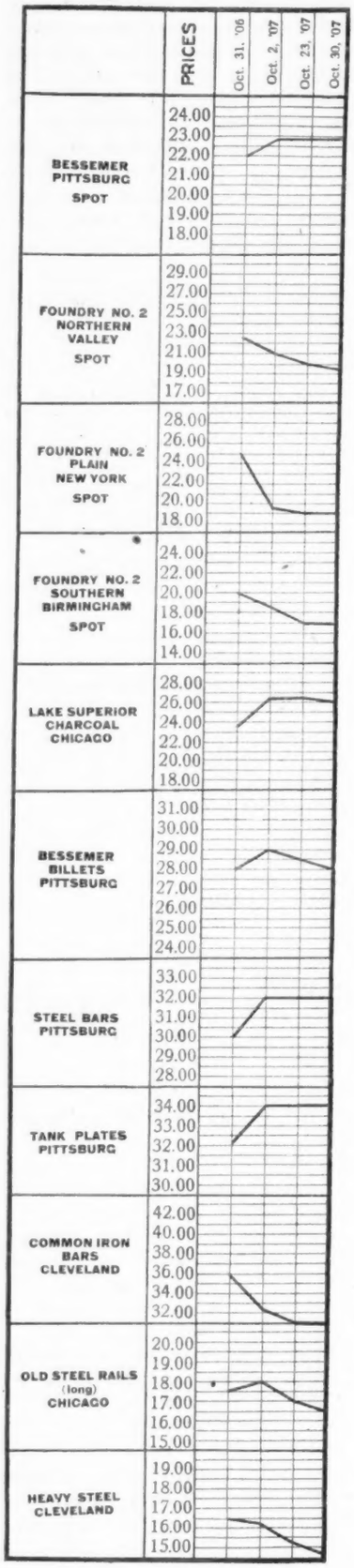
Oct. 28.

Lead and Zinc.—Car shortage materially reduced the shipment of ore from the Joplin district last week, which also had a tendency to lower prices.

Zinc quotations remained firm until the middle of the week, but when the inability to ship ore became a certainty, the slight decline was recorded. The top price of zinc ore during the week was $46 a ton, with a basic price of $43, scaling down to $41 for 60 per cent ore.

The highest price realized for lead was $55. Lead was also a half dollar lower on the ton toward the close of the week, and few sales were recorded. As a result of this, one company proposes to put its large lead production on the St. Louis market in car load lots, to be sold on assay basis and dry weight.

PRICE CHART.



NEVER SO STRONG.

(Continued from page 679.)

customers, jobbers and others, are unusually low. It has been difficult during the last few months for those desiring to purchase our commodities to secure adequate funds, and this has resulted in some curtailment; but it is believed these conditions will rapidly improve, especially if the unwarranted excitement which has been witnessed shall soon entirely disappear.

"Our collections during the last few weeks have not been quite as good as usual, but are not bad. We have few accounts receivable that are past due, and very little, if any, that will not soon be paid.

"We have for some months anticipated the possibility of some diminution in orders, and have therefore made preparations accordingly. Our inventories are not large, the total stock of pig iron, for instance, being only 88,469 tons (about the minimum in the history of the corporation). We were never before so strong in cash and cash resources. Throughout our organization the greatest care and watchfulness are exercised in protecting the affairs of all the companies. Our organization, our facilities and our opportunities are better than ever before.

"I believe we are on a friendly footing with our employes, our customers, our competitors, and the public generally. Certainly such is our desire, and shall be our effort.

"Prices have been well maintained. The leading steel manufacturers are in frequent consultations, though under no agreement, concerning their business interests. It seems to be a recognized fact that stability of prices is to be desired by both the producer and consumer; that extremely high prices and extremely low prices are both objectionable.

"All expenditures shown in above table, except $1,047,000, have been paid. The latter amount represents deposits of employes under a savings account arrangement.

"Upon the completion of the new work under way the productive capacity of the manufacturing plants will be materially increased. Up to Jan. 1, 1907, the average increase already amounted to 44.33 per cent.

Expenditures at Gary.

"There has been reserved and set aside to date funds for the Gary plant at Indiana amounting to the sum of $49,000,000. Of this amount $18,539,000 has already been expended, leaving on hand for that purpose a balance of $30,461,000. This fund is represented by cash amounting to $11,754,768.46, and first-class interest bearing securities amounting to $19,065,242.89.

Optimistic on Outlook.

"As to the future: If the results are measured by the necessities and the pecuniary ability of the people of this country generally, there should be no doubt of continued prosperity. There has existed during the last week a delirium of excitement. The feeling in a large measure has been without cause, and there is already a change for the better. If all of us do everything in our power to maintain a high standard for the conduct of affairs in our charge we can be of great benefit in restoring the confidence necessary to success. What can be accomplished by one man and associates has been abundantly demonstrated in this city during the last week."

Dividends at same rate as for some time were declared. The financial statement is shown in the accompanying table.

What the Corporation Has Done.

Since the corporation was organized, in addition to the payment of dividends and interest, there has been provided from earnings a reserve for extinguishment of capital of		$ 79,570,000
Added to the assets from the same source		266,180,000
The latter is represented by investments in additional fixed property, and formally written off to profit and loss surplus	$112,850,000	
And invested in additional fixed property and not written off because securities to cover the same have been created and are held in the treasury as salable assets	48,400,000	
And there is represented by liquid assets on hand	104,930,000	
Total	$266,180,000	
Total liquid assets of the organization Oct. 1, 1907		$331,596,000
Divided as follows:		
Investments in securities for the benefit of various fund accounts (at cost)	$ 21,397,000	
Sundry marketable stocks and bonds (at cost)	6,606,000	
Inventories	134,983,000	
Accounts and bills receivable (customers)	68,879,000	
Short time and call loans on collateral	23,758,000	
Cash in banks	75,973,000	
Total		$331,596,000
Current liabilities, including accrued taxes, accrued interest, and the dividend for the last quarter	52,187,000	
When the Corporation was organized subsidiary companies had outstanding unsecured notes and bills	42,000,000	

DISCUSSING STEEL RAILS.

(Special Telegram.)

New York, Oct. 30.—The semi-annual convention of the American Railway Association meeting today is of interest in connection with the steel rail problem.

The committee which has been working on specifications held a meeting with the association executive committee yesterday and will report to the convention today. It is expected, however, that the report will not be final and that the committee will be continued.

Improved inquiry on standard sections is reported. The Steel Corporation has sold 15,000 tons for export at $30, with other tonnage pending.

Earnings.

July, 1907		$13,804,167
August, 1907		15,279,173
September, 1907		14,720,945
Total earnings after deducting all expenses incident to operations, including those for ordinary repairs and maintenance of plants, employers' bonus funds, and interest on bonds and fixed charges of the subsidiary companies		$43,804,285
Less, Charges and Appropriation for the following purposes, viz:		
Sinking Funds on Bonds of Subsidiary Companies	$ 589,358	
Depreciation and Reserve Funds (Regular provisions)	6,519,822	
Special Improvement and Replacement Funds	1,000,000	
		8,109,180
Net Earnings		$35,695,105
Deduct:		
Interest for the quarter on U. S. Steel Corporation Bonds outstanding	$ 5,633,122	
Sinking Funds for the quarter on U. S. Steel Corporation Bonds, viz.:		
Installments	$1,012,500	
Interest on Bonds in Sinking Funds	291,340	
	1,303,840	
		6,936,962
Balance		$28,758,143
Dividends for the quarter on stocks of the United States Steel Corporation, viz.:		
Preferred, 1¾ per cent	$ 6,304,919	
Common, ½ per cent	2,541,513	
		8,846,432
Surplus for the quarter		$19,911,711
Less, appropriated from Surplus for the following purposes, viz.:		
On account of expenditures made and to be made on authorized appropriations for additional property, new plants, construction and discharge of capital obligations		15,000,000
Balance of Surplus for the quarter		$ 4,911,711

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October 31, 1907.

ELECTRIC STEEL MAKING.

Substantial progress is being made in the manufacture of steel by the various electrical processes. A plant has been in operation for a couple of months at Voelklingen, Germany, using a modified Kjellin induction furnace, and was lately inspected by a party of German, Belgian and Russian manufacturers. An interesting feature of this plant is that it uses steel from a basic Bessemer converter. As electric steel making has been prosecuted in the United States, steel from the basic open-hearth furnace has been employed. The principle is the same, the primary operation of melting and partly purifying the material being performed by whatever facilities are most readily available. A list compiled several months ago and probably incomplete showed 19 electric steel plants in operation or being built in various countries, France leading with six plants.

The friends of the different electric steel furnaces claim that a product can be made equal to the best crucible steel, and there is no question that the cost of production is less, with current at a favorable price, as crucible steel-making is very expensive. It is true of the electric process as of all steel-making processes that the best product cannot be made from the poorest raw materials, but there is more latitude with the electrical than with other processes. It cannot eliminate copper and arsenic, for instance, but by practically eliminating phosphorus and sulphur it removes the injurious effects of these metals. The fundamental principle of the electric furnace is that vigorous oxidation of impurities can be employed, the high temperature ensuring extreme deoxidation of the steel.

DIGESTED OR UNDIGESTED PRODUCTIVE CAPACITY.

It is natural to look upon the large number of new blast furnaces which are being erected from a standpoint much like that taken by Mr. J. P. Morgan in his famous interview four years ago regarding digested and digestible securities. Mr. Morgan made the point that while a large volume of securities had been issued and had not been digested, the securities were not indigestible, and in sufficient time they could be digested. One is inclined to regard the great volume of new pig iron capacity coming into being in this period in the same way; that the capacity is not needed, and therefore is not digested, but that in the natural growth of demand it will be needed eventually, and that then it will be digested. On reflection this view does not appear to be altogether correct, since as a matter of fact a great deal of new capacity has been digested already. To date there has been practically no accumulation of pig iron, and scarcely a single blast furnace has been blown out because its production is not needed, yet the capacity of new furnaces blown in since Jan. 1 is very large, easily exceeding 2,000,000 tons a year. This quantity, at any rate, of the new capacity has already been digested. What is yet to come in may not be digested at once, but it is accomplishing a great deal to have digested so much new capacity, in a period during which the outlook has consistently failed to point to greater consumptive demand.

The record of the year to date has been 15 absolutely new blast furnaces, beginning with Haselton No. 3, on Jan. 1, and closing with McKeesport D, on Oct. 11, these furnaces having a capacity, according to their conservative ratings, of 2,110,000 tons. Four of them, Carrie Nos. 6 and 7, Lorain E and McKeesport D, were by the United States Steel Corporation; six of them, Haselton No. 3, Lackawanna No. 7, Bethlehem E, Minnequa F, Cambria No. 8, and Madeline, were by other steel interests; and five of them, Toledo No. 2, Josephine, Federal, Perry and Mayville, were by merchant interests.

Never before in the history of the American iron trade have new furnaces been completed and blown in so rapidly. Had there been surface indications during this period of an increasing demand the digestion of this new capacity would not have been remarkable, but such has certainly not been the case, the only obvious outlet for the new production having been the cutting off of imports, which would account for not more than a fifth, at the outside, of the increased production. The remainder has quietly found consumption when there was no particular reason to suppose that consumption was increasing. Had there been no new furnaces in course of erection at the beginning of this year, it is improbable that anyone, reasoning from the prospects of consumption, would at any time since then have ventured to predict any serious shortage.

That the new capacity still to come in can be digested as easily, is hardly to be hoped. There is, however, less occasion for its being digested at once. The 15 furnaces blown in during the past 10 months comprised, as noted, four by the Steel corporation, six by other steel interests and five by merchant interests. There are about 23 new furnaces which could be completed and blown in during the next 10 months, or to Sept. 1,

1908, but the distribution as to ownership is totally different, there being 12 of the Steel Corporation, eight by independent steel interests and only three by merchant interests. The Steel Corporation can readily take care of its furnaces; there are two Duquesne, two Ohio and eight Gary. The Steel Corporation is building these furnaces from surplus earnings, and it had no other good place in which to put the money. The eight furnaces by outside steel interests include four Aliquippa, which the Jones & Laughlin Steel Co. would probably be glad to run even should it have to blow out some of its Pittsburg furnaces, while the furnaces of the Youngstown Sheet & Tube Co., International Harvester Co., and New York State Steel Co. will merely displace the pig iron merchant furnaces which ought to be able to look after their own interests. Of the three merchant furnaces being built, two are second stacks, and will therefore be less of a disturbance than new furnaces by new selling interests.

Altogether, the building of new blast furnaces is disturbing the situation very much less than would naturally have been expected. The new capacity which has come in has been digested and that which is to come in is quite digestible. Undoubtedly the iron and steel market next year would be stronger had this new capacity not been projected, but there is a mimimum of disturbance on account of it.

Abandon Construction Work.—It is announced that new construction work at the South Chicago yards of the American Ship Building Co. will be abandoned and that the yards will be devoted exclusively to repair work in the future. This change will involve a considerable reduction of working force and equipment which will be moved to other plants of the company. Labor troubles are responsible in part for the decision to cease new construction in the South Chicago yards.

The Tate Accumulator Co. of Canada, Ltd., has been incorporated by Alfred C. Tate, James C. Stewart, Frank A. Drake, and others, with an authorized capital of $500,000, to manufacture electrical accumulators and other appliances at Toronto.

WESTINGHOUSE CONCERNS

Placed in Receivers' Hands Owing to Financial Stringency.

The stringency in the money market, with consequent inability to secure adequate working capital, has placed several of the Westinghouse interests in the hands of receivers. After a conference between interested parties, including Geo. Westinghouse, the Pittsburg clearing house committee, and several bankers, it was deemed advisable to apply for the receivership as the best means of carrying on the work now on the books of the companies without suspending operations.

Judge Nathaniel Ewing, of the United States circuit court, sitting in Pittsburg, appointed the following business men to take charge of affairs:

T. Hart Given, president of the Farmers' Deposit National Bank; H. S. A. Stewart, real estate man and financier, and E. M. Herr, vice president of the company, as receivers for the Westinghouse Electric & Manufacturing Co.

Wm. McConway, president of McConway & Torley Co.; W. H. Donner, president of the Union Improvement Co.; and E. E. Keller, vice president of the Westinghouse Machine Co., as receivers for the Westinghouse Machine Co.

The Fidelity Title & Trust Co., of Pittsburg, was named as receiver for the Security Investments Co.

It was stated that it was deemed for the best interests of the stockholders of the companies, the employes and the creditors that the court appoint receivers to carry on the business of the companies rather than close down.

The bill sets forth that each of the industrial companies is solvent, has large orders and that it is to the best interests of all concerned that the contracts now on hand be carried out.

The court made an order that the industrial companies be operated under the receivers and that they be authorized to purchase such material as might be necessary to carry on the business of the companies.

It was explained that the Security Investment Co. was purely a Westinghouse concern, being practically owned by George Westinghouse, and that the company has been advancing money in the two industrial companies until its resources had been exhausted.

Judge James H. Reed, in telling the court what had brought about the present conditions, said that it was due to the large expenditure of money in the extension and betterment of the plants, but that such outlay had been practically completed and from now on the earnings would not be devoted to such purposes.

Immediately upon the appointment of the receivers George Westinghouse issued this statement:

"When the Pittsburg clearing house committee, after full investigation and conference with me, concluded that, although the Westinghouse Electric & Mfg. Co., and the Westinghouse Machine Co. were solvent, receiverships were advisable as the best means of protecting the interests of all concerned, it was clearly our duty to follow their friendly advice.

"The necessity for the receiverships is due solely to the acute financial stringency and consequent inability to renew our maturing paper. Both the electric company and the machine company are solvent and doing the largest and most satisfactory business in their history, and each company is earning liberal dividends on its stock and has quick assets substantially equal to its liabilities.

No One to Suffer.

"I most confidently believe that every creditor of each company will be paid in full and that with wise management under the direction of the receivers appointed by the court, the properties will soon be restored to the stockholders.

"The loans to the Security Investment Co. and myself are secured by the stocks of the Westinghouse manufacturing companies, chiefly stock of the electric and machine companies, the sudden decline in the market values of which, on Monday and Tuesday of this week, has made it impossible for us to margin our loans.

"I strongly advise all holders of such loans to hold their collateral, the value of which, I am confident, will in time be sufficient to pay the loans. The sacrifice of the collateral in the present condition of the market can benefit no one. A policy of patience and forbearance is what the situation requires."

ANNUAL MEETING OF A. S. M. E.

The twenty-seventh annual meeting of the American Society of Mechanical Engineers will be held in the Engineering Societies building at 29 West Thirty-ninth street, New York, Dec. 3-6, 1907. Symposiums on foundry practice, giving the experiences of prominent men in that work, have been arranged. The specific heat of superheated steam will be taken up, and important and exhaustive work by a professor of engineering at Cornell University will be presented. The utilization of low grade fuels in gas producers, combustion control in gas engines, tests of producer gas engines, etc., will be given a session. Other live topics, such as industrial education, power transmission by friction driving, cylinder port velocities, etc., will be discussed. All of these subjects have been treated by prominent engineers of Europe and America, professors of American universities, and men eminent in the particular work of which they write.

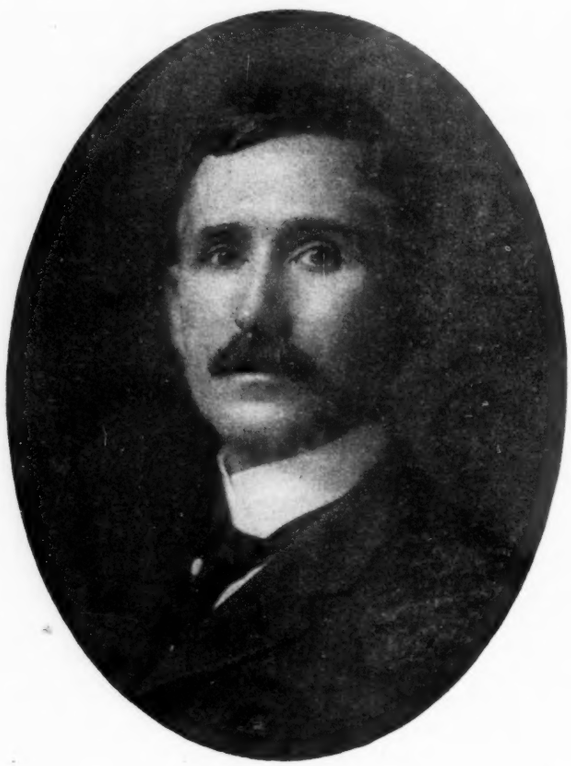
GUTHRIE IS PRESIDENT

Of Republic Iron & Steel Co.—Mr. Topping Chairman of Board.

The board of directors of the Republic Iron & Steel Co. at a meeting held in New York Oct. 23 effected their permanent organization, and elected the following officers: John A. Topping, chairman; T. W. Guthrie, president; T. J. Bray, vice president; S. P. Ker, vice president; H. L. Rownd, secretary and treasurer. While Mr. Topping retires from the presidency of the company, he remains as chairman of the board and will remain in active charge of the New York office, the change being more in title than in the nature of his duties. He will in no way relinquish his position as active head of the organization, but the change was made in order to centralize work and perfect the organization of the company. Much of the detail work heretofore falling upon Mr. Topping will be assumed by Mr. Guthrie, now president. Mr. Guthrie, who has hitherto held the title of assistant to the president with office in Pittsburg, where the general offices of the company are located, will continue his operations from that point as president of the company, but aside from the change in title and an extension of his duties, there will be no change in the general management and no further reorganization of the working force will be made. The executive committee consisting of Grant B. Schley, Leonard C. Hanna, Earl W. Oglebay, John W. Gates and John A. Topping was re-elected. The board of directors of the Republic Iron & Steel Co. is as follows: Grant B. Schley, Earl W. Oglebay, Leonard C. Hanna, John W. Gates, John A. Topping, J. B. Duke, E. J. Berwind, G. Watson French, S. G. Cooper, Harry S. Black and T. W. Guthrie.

Mr. Guthrie, who has been assisting Mr. Topping since the latter was elected to the presidency of the company in January, 1906, was formerly assistant superintendent of the St. Paul division of what is now the Chicago & Great Western railroad. Later he became secretary and general sales agent for the H. D. Turney Co. of Columbus, O., Hocking valley coal operator, and afterwards served as secretary of the Congo Coal & Mining Co. He then became secretary and general sales agent for Turney & Jones Co., and in 1898 was appointed general manager for the receivers of the latter concern. Mr. Guthrie became general manager of the reorganized Congo Coal & Mining Co., until in 1902 it was sold to the Continental Coal Co., when he was made president and general manager of the Continental Coal Co., one of the largest concerns in the Hocking valley, with headquarters at Columbus, O. On Sept. 1, 1905, the Continental Coal Co. was purchased by the Sunday Creek Co. On Oct. 20, 1905, Mr. Guthrie was elected secretary to the executive committee of the Republic Iron & Steel Co., with headquarters in New York, and served in this capacity until Jan. 11, 1906, when, owing to changes in the executive committee and the death of C. S. Guthrie, chairman of the board, he resigned and President Topping asked the authority of the committee to appoint him an assistant in charge of the coal and coking departments.

TRACY W. GUTHRIE.



JOHN A. TOPPING.

May Close Plant.—East St. Louis officials of the American Steel Foundries admit that a shut-down, at least temporarily, probably will take place about Nov. 15. The shut-down, it is said, will throw 1,000 workmen out of employment. The plant is located at Twentieth street and Broadway, East St. Louis. Its pay-roll includes the names of 500 laborers, who draw $1.80 a day, and 500 other workmen whose daily wages are from $2.50 to $6, with a few who are paid more.

SOUTHERN STEEL CO.

Placed in Hands of Receiver for Protection of Bondholders.

Following the filing at Birmingham, Ala., on Oct. 24 of an involuntary petition in bankruptcy against the Southern Steel Co., Edgar Alder, E. M. Chandler and J. O. Thompson were appointed receivers. This course was followed for the protection of the holders of some $5,100,000 bonds of the company, as the financial situation precluded the possibility of raising a sufficient amount to meet certain heavy liabilities about to become due. It is stated that, with the exception of one furnace, all the properties of the Southern company are in operation and are returning sufficient profit to cover interest on the bonds. The company is capitalized at $25,000,000, of which $10,000,000 is preferred stock, and $15,000,000 common. The value of properties held is estimated at about $15,000,000, equal to the bond and preferred stock issues.

The Southern Steel Co. holdings included a total of four blast furnaces, a steel plant and two finishing plants. It had its start in the consolidation, several years ago, of the Alabama Steel & Wire Co., the Schuler interest, with the Underwood coal properties. About two years ago, when a $3,000,000 bond issue was floated on these holdings, a careful examination was made by Julian Kennedy and C. P. Perin, who reported that earnings in excess of $900,000 annually could be expected. Early in September, 1906, a reorganization was effected, the properties of the Lacey-Buek Iron Co. and the Chattanooga Coal & Iron Co. having been absorbed, and an increased capitalization was provided for their development. At a meeting in New York a week later, a change was made in officials, Moses Taylor becoming president, C. P. Perin chairman of the board, E. T. Schuler and C. E. Buek vice presidents, and George H. Schuler treasurer. In addition to these, the directory board included Oakleigh Thorne, Robert B. Van Courtlandt, J. D. Lacey, John Bindley, H. B. Schuler, and Courtlandt Van Camp. A month later, the properties of the Georgia Iron & Coal Co. were purchased, these being the blast-furnace at Rising Fawn, Ga., and large bodies of coal and brown ore lands. One estimate is that the total holdings of the company include 200,000,000 tons of coal and 100,000,000 tons of iron ore.

In April of the current year the stock of the treasurer, George H. Schuler, was purchased and optioned by a syndicate of stockholders and he retired, going abroad for the summer. The company has been finding a ready market for its entire output, but the working capital had become depleted by reason of the payment for extensive improvements out of current funds and with some heavy obligations due about Nov. 1 the receivership was decided upon. The directors have been authorized to borrow a sum not exceeding $200,000 to carry on operations and the plants will be operated by them.

CINCINNATI INDUSTRIAL PLANTS VISITED.

The Cincinnati Industrial Bureau gave its third annual industrial excursion on Thursday, Oct. 24. The C., H. & D. R. R. furnished a special train for the accommodation of the business men who as guests of the Industrial Bureau were to visit the plants along its line. About 150 men took advantage of the opportunity to make this trip, which proved educational, as many were surprised at the magnitude of the manufacturing plants visited. The first stop was on the private switch of the Lunkenheimer Co. plant at Fairmount. The party was received by the officials of the company and escorted through the plant. On reaching the top floor, a buffet luncheon was served. Souvenirs were given to each guest in the form of a small brass valve. This plant is regarded as the largest in the world engaged in manufacturing engineering specialties. The plant covers an area of 10 acres and at present has about 200,000 square feet of floor space. With the addition of the plant of the Cincinnati Screw & Tap Co., recently purchased, and the foundry buildings under construction, there will be added 300,000 feet of floor space.

The well known plant of the Proctor & Gamble Co. was next on the line of visits. This plant employs about 2,000 men and women.

The Laidlaw-Dunn-Gordon plant was the third visited. This is located at Tweedvale. The company operates its own foundry and employs between 700 and 800 men. Its principal products are pumping engines, steam engines, hydraulic machinery and air compressors. A number of large and interesting special machines are in operation in this plant.

The plant of the Block-Pollak Iron Co. at Steelton was the next in order. The company has a tract of about 25 acres of ground here. The manufacture of railroad car and locomotive axles, heavy machine and marine forgings is its specialty. About 500 men are employed. Arrangements have been completed for the erection of a new steel mill on the tract of land adjoining the present plant. Building operations will begin on the new enterprise within a short time.

The Hess Spring & Axle Co. was the last plant called upon. It is located at Carthage near the Block-Pollak plant. There are about 350 men employed there and the company makes buggy springs and axles. Its output is about 150,000 to 200,000 sets of springs and axles per annum.

RECEIVERS APPOINTED

For Atha Steel Casting Co.—Tight Money the Cause.

On order of the United States court, receivers were appointed on Monday for the Atha Steel Casting Co., Newark, N. J. Benjamin Atha, for years the moving spirit in the organization, Ernest F. Harder, also of Newark, and George A. Hebard, of Brooklyn, were named as receivers. Application was made by the firm of J. Tatnall Lea & Co., of Philadelphia. Assets of the company are estimated at $1,627,230, divided as follows:

Plant, etc., $860,000; raw materials, $118,000; castings, etc., $58,000; patents, good will, $427,000; accounts and notes, $147,048; cash, $5,182; furniture, etc., $12,000.

Accounts payable, chiefly to pig iron concerns, aggregate only $131,700. The company has $500,000 stock and $800,000 bonds outstanding. The application for receivership was caused by the tight condition of the money market: the company had due from two of the Westinghouse interests about $75,000, and the failure of these concerns was the immediate cause of the difficulty.

Has Good Contracts.

The Atha company has been in operation for a long term of years. In May, 1906, the Security Investment Co., Pittsburg, financed the plans of the company for a new plant and this was put in operation about a year ago. The Pittsburg concern was involved in the Westinghouse failure, thus making assistance for the Newark concern impossible at this time. The company has a number of good contracts on hand; arrangements have been made to continue operations and the officials and receivers feel sure all accounts can be met in full and the concern reorganized within a short time.

PERSONALS.

R. L. Lusk, for a number of years associated with various structural steel interests in New York, has taken service with the Bethlehem Steel Co., being connected with the New York office, 100 Broadway.

John W. Young, general European manager of the Allis-Chalmers Co., has resigned and is expected to return to the United States about Dec. 1. His address after Nov. 1 will be at the Engineers' Club, 32 West Fortieth street, New York.

William O. Lee, formerly president and manager of the Lee Injector Mfg. Co., Detroit and Port Huron, Mich., has associated himself as sales manager and in the manufacture of injectors, check valves, etc., with the Baker-Churchill Co., 259 Willis avenue, E. Detroit.

G. W. Pope, contracting agent of the Minneapolis Steel & Machinery Co., Salt Lake City, Utah, has been promoted to the position of general contracting agent of the company with headquarters in Minneapolis. T. E. Beyer, who has been assistant to Mr. Pope, has succeeded to the Salt Lake City post.

John S. Bonner, who for the past three years has had the management of the export business of the Page Woven Wire Fence Co., Adrian, Mich., has resigned and has entered the newly-organized firm of F. R. Moore & Co., Detroit, which will carry on a general export business, including the handling of shipments of Page fence to foreign countries.

T. S. Troxell, who on July 1 succeeded Ed. T. Conners as sales manager of the Portsmouth Steel Co., Portsmouth, O., has resigned his position and returned to Cincinnati, where he is again associated with his old employers, the W. F. Robertson Steel & Iron Co. His successor at Portsmouth has not yet been announced.

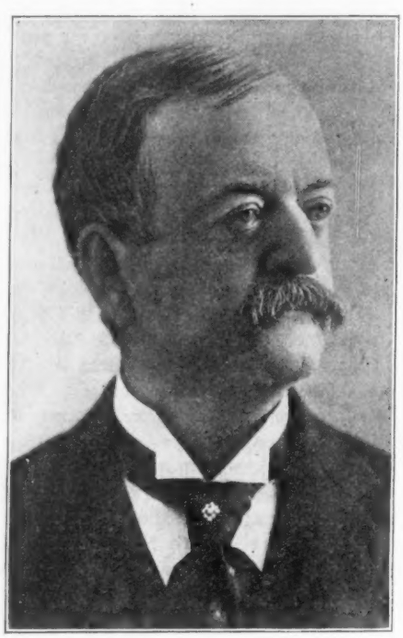
Prof. John E. Sweet, president of the Straight Line Engine Co., Syracuse, N. Y., celebrated his seventy-fifth birthday on Oct. 21. Professor Sweet is well known throughout the mechanical engineering profession, being one of the founders and an honorary member of the American Society of Mechanical Engineers. He was at one time professor of mechanical engineering at Sibley College, Cornell University.

E. B. Barker, manager of the Cincinnati branch of the Crucible Steel Co. of America, has resigned, and on Nov. 1, will connect himself as manager of the Cincinnati sales department with the Columbia Tool Steel Co., whose mills are located at Chicago Heights, Ill. The Columbia Tool Steel Co. has rented the entire building at 112 W. Second street, Cincinnati, and will carry one of the largest stocks of tool steel in the south.

Geo. H. Schuler, until recently treasurer of the Southern Steel Co., has returned from Europe, where he spent the summer, and is enjoying a yachting trip on the Matomah along the Atlantic coast with his father, H. B. Schuler. He will shortly rejoin his family in Europe, where they plan to remain a couple of years.

OBITUARIES.

Charles H. Deere, president of the great plow manufacturing plant of



CHARLES H. DEERE.

Deere & Co., Moline, Ill., and a prominent captain of industry, died Oct. 29, at the Lakota hotel, Chicago, at the age of 70 years. Mr. Deere had been a sufferer for months with an ailment which had been diagnosed as pernicious anaemia, and had sought relief from specialists in Chicago when overtaken by death. Mr. Deere was born in Hancock, Vt., March 28, 1837, and was the only surviving son of John Deere, the veteran plow-maker and founder of the business of Deere & Co. Entering the works at the age of 18, he grew up in the business until he had reached the post of vice president and general manager. At his father's death in 1886 he succeeded to the presidency. Mr. Deere, in addition to his connection with Deere & Co., founded the Deere & Mansur Co., Moline, maker of corn planters, harrows, drills, cultivators, etc., and was largely interested in other enterprises.

John S. Rowell, president of the J. S. Rowell & Sons Mfg. Co., Beaver Dam, Wis., farm implement manufacturer, died Oct. 21, in that city, at the age of 83 years. Death was due to gangrene which followed an injury to the right foot sustained while on a fishing expedition a short time before. He was born in Pennsylvania and came to Wisconsin in 1837, settling at Beaver Dam. By persistent energy and application, Mr. Rowell saw the implement plant he had founded grow from a modest beginning to one of the largest of its kind in the northwest, and himself become a man of large affairs, honored as the "father of Beaver Dam." In addition to his interest in the J. S. Rowell & Sons Mfg. Co., Mr. Rowell was president of the Beaver Dam Malleable Iron Works and gave his attention to banking and mining enterprises. He was an enthusiastic sportsman and while following his favorite diversion, sustained the injury that eventually caused his death.

Edward C. Stanley, of the old-time type of business men of Cleveland, died in that city, Oct. 24, at the age of 77. Mr. Stanley's former home was in New York state, but he came to Cleveland at the age of 14. After serving valiantly in the civil war under General Buell, he engaged in the iron business, becoming a pioneer in the trade of the city. The foundry in which he was interested was the first in Cleveland, if not in the United States, to make cast iron water pipe.

Major Collins, one of the pioneers of the iron and steel industry in Cleveland, died at his home in Brazil, Ind., Oct. 23. His death was caused from paralysis which followed an attack of nervous prostration some time ago. Mr. Collins, coming to Cleveland from Troy, N. Y., became superintendent of the Lake Shore mills, in 1859. Four years later he was instrumental in building the Collins mills in Cleveland, and in 1868 he went to Brazil, where he purchased the plant of the Central Iron & Steel Co. From a small enterprise, the company grew to large proportions and was operated successfully until several years ago, when it was purchased by the United States Steel Corporation and dismantled.

ENGINEERING OBSERVATIONS AND DATA

BY B. H. REDDY

In the preface to the engineer's pocketbook by Nystrom, we find this advice: "Every engineer should make his own notebook," according to his needs. In the preface to the first edition of Trautwine's engineer's pocketbook, is the statement that "one of the leading objects has been to elucidate in plain English, a few important elementary principles, which the savants have enveloped in such a haze of mystery as to render pursuit hopeless to any but a confirmed mathematician." Again we find that "nearly all the scientific principles which constitute the foundation of civil engineering, are susceptible of complete and satisfactory explanation to any person who really possesses only so much elementary knowledge as is supposed to be taught to boys 12 or 14 in our public schools; the little that is beyond this might safely be intrusted to the savants." The statement follows that many of the books on engineering subjects "are productions of master minds and exhibit a profundity of knowledge beyond the reach of ordinary men, yet their language is also so profound that very few engineers can read them." If the eminent and leading lights in the engineering profession are unable to properly digest these profound works, what is the probable result when one of the small followers of the profession undertakes to secure information from these same works for application to his needs? The results achieved are very frequently unsatisfactory alike to employer and employe.

The writer has had some experience with a number of different types of followers of the engineering profession, and will use several as illustrations. At one time he was associated with a young mechanical engineer whose father was the author of a profound and well known work on engineering. This young man had been given an excellent engineering education; at least he attended the colleges for an ample length of time to achieve such result, yet was unable to understand or use but few of the formulae in his father's work. When he required any calculations, he almost invariably referred them to a draftsman who had been a machinist, and who did not possess a common school education.

At another large works was a man who laid claim to having graduated from several technical institutions of note. It was the boast of this man that he did not accept the accuracy of any of the engineering formulae, but personally checked them, so he would know them to be correct. He spurned the simple and "short cut" methods, and "buried out of sight under heaps of mathematical rubbish" the most simple facts. This same man, when called upon to design a gear of 6-inch pitch, 16-inch face, approximately 7 feet 2 inches pitch diameter, to drive a shaft 18 inches diameter, made the diameter of the hub 21 inches and the thickness of the shrouding 1⅛ inches, because, as he said, "it figured strong enough." This man may have possessed, as do many others, a great deal of mathematical knowledge, but certainly did not have that most essential quality, engineering judgment. A mere glance at the above mentioned gear would have shown to a practical man, who was unable to figure strains of any sort, that it was of improper design. In the illustrations noted, the first man may have possessed the mathematical knowledge but was unable to make use of it. The second did not have the advantage of an education, but possessed practical knowledge and judgment, and was able to use the same to an advantage, while the third possessed more than the requisite mathematical knowledge but used it "not wisely but too well."

In speaking of his early experiences, the general manager of a large iron and steel works said that he always made it a practice to take notes and observe closely. He said: "I have often secured valuable pointers from greasers in the mills. We hear many things of value to the engineer, but we must be able to separate the wheat from the chaff." This man came to his company as a draftsman and adhered to his practice of making notes, securing accurate information regarding details, etc., and having the same tabulated and arranged so that it was available for use at any moment. He passed successively through the various leading positions in his company until he reached the position of general manager. Although the possessor of a fine education, he invariably resorted to the simple and "short cut" methods, if possible. It was the writer's good fortune to be employed by this engineer, and from him much was learned about "short cuts" and the convenient arranging of the accumulated data.

If one is to learn anything from the foregoing, it would seem to be: 1. Absorb information at all times and at all places from anyone. 2. Observe closely and make notes. 3. Use simple and "short cut" methods whenever possible. Care should also be taken in the application of the engineering formulae as not infrequently the results obtained are misleading, to say the least. Nearly every engineer has discovered some ways best suited to his practice by which he can save time and labor in securing results. Some of these short cuts might not bear a strictly mathematical investigation, yet will be sufficiently accurate for ordinary use.

There are many opportunities for a draftsman to secure accurate data and general information, that will be of value to him in his work, in the frequent discussions over his drawing table, on pattern making, machining, erection, repairing, etc., if he will only separate the bits of useful information from the general conversation. He should closely observe the different operations in the mills and shops, and make it a point to secure accurate information regarding them. By becoming acquainted with the men operating and repairing the various devices, he will learn considerable about their behavior under the conditions of actual service. It is remarkable how many draftsmen there are who pose as designers, yet by their work show that they know very little, if anything, about the shrinkage of metal in castings, setting, holding and extracting of cores, or about the difficulties of machining some of their productions. Neither do they appear to take the trouble to even inquire, as nearly all such information can be had for the asking. A great deal of their work is neither a credit to themselves nor economical for their employers. The value of short and simple methods, for the securing of results, does not appear to appeal to them as being worth the while to become proficient in their use. Again, some draftsmen make it a practice to "absorb" all kinds of blue prints, and take these prints by the trunkful with them about the country. This is not necessary to the man who is a competent designer, except in exceptional cases, a general arrangement being usually sufficient.

In nearly every case the requisite data can be condensed and arranged in a convenient manner, so that they may be kept at hand for ready reference when needed, one of the difficulties encountered being the securing of such an arrangement after the data have been collected. Acting on the assumption that it will prove of interest to at least a few of the readers of THE IRON TRADE REVIEW, the writer will give some of the data as collected and used by him in his practice, and the manner in which it is arranged.

Rolling Mill Data. Table I.

This is a collection of the principal proportions of a number of mills of several different styles. As an aid to those who may wish to arrange a similar table, the widths of the vertical columns on the blue print are given. This table is arranged so that the proportions of the different mills can be directly compared. It will be noticed that the first mill in the table is a 32-inch, 2-high, reversing, universal slabbing mill. Not having a middle roll, the corresponding column is left blank. The fourth mill is a 3-high, Lauth style plate mill, with middle roll but no vertical rolls. Therefore, the corresponding columns are also left blank. Note is made of this feature to call attention to the manner in which mills of widely differing characteristics may be tabulated.

This table contains about all the data necessary in the way of proportions, and used in connection with a general arrangement should be all that will be needed for the design of a new mill. In this connection, it might not be amiss to call attention to several features of mill design.

Table I.

ROLLING MILL DATA

Owned By	Located At	Built By	Size of Engines	Product	Kind of Mill	Size of Mill	Housings	Main Rolls	Vertical Rolls	Screws	Pinions
				Slabs	2-High Reversing	32"	C I				
						32"	- -				
			30"×48"	Skelp	3-High	22"	-				
			44"×60"	Plates	3-High Lauth	30"	S C				
				Blooms	2-High Reversing	32"	C I				
				Structural	3-High	28"	-				

The writer had the privilege of examining drawings made in 1874, for a 3-high, universal plate mill which was built, tried and discarded as a failure. The vertical rolls were cast iron collars, 12 inches diameter, keyed to shafts 3 inches diameter, while the side screws were 2½ inches diameter. Compare this with the first mill shown in the table, in which the vertical rolls are 22 inches diameter with bearings 14 inches diameter by 13½ inches long, while the side screws are 8 inches diameter. Although the latter is a somewhat larger mill, there is a great difference in the proportions of the two mills, and the causes of the failure is readily apparent; viz., too light construction. There is very little calculating required when designing a mill, that will need more than an elementary knowledge of mathematics, the principal requirement being an accurate knowledge of the proportions of similar mills and their behavior under the conditions of service. A mill that has rolled iron plates 60 inches wide for years without breaking a cast iron housing having only 189 square inches net area, is in use today, yet when designing a housing for a similar mill—to roll plates only 40 inches wide, 224 square inches net area were used. In another mill rolling plates 84 inches wide, the net area of the housing was 354 square inches, but when designing a recent 3-high universal mill to roll plates only 42 inches wide, 439 square inches were used. This will serve to indicate the tendency to design mill work of increased weight. A housing of much less weight might possess ample strength for the direct strains of rolling, and yet not possess the necessary weight and stiffness to satisfactorily withstand the shock of the moving parts and of the incoming steel.

Proportions of Heating Furnaces.

In this table are shown data of a different character, yet which are arranged in a manner similar to the data in Table I. This table, used in conjunction with a notebook containing data on the repair, life and working of the different furnaces, has been of considerable value to the writer. To the uninitiated, brickwork and furnace work seems to be surrounded with a sort of mystery or uncertainty. To these, a handbook of shapes, etc., such as may be procured from some of the manufacturers of firebrick, will prove of considerable assistance.

Table II.

Location of Heating Furnace	Kind	Size of Hearth: Width	Size of Hearth: Length	Area of Furnace: Horizontal Area of Hearth	Area of Furnace: Area of Vertical Cross-Section of Bridge	Regenerators: Cubical Contents of Checkers: Gas	Regenerators: Cubical Contents of Checkers: Air	Regenerators: Horizontal Area: Gas	Regenerators: Horizontal Area: Air	Ratio: Horizontal Area of Regenerators Gas to Air	Ratio: Cubical Contents of Regenerators Gas to Air	Ratio: Horizontal Area of Bridge Compared with Cubical Contents of Regenerators	Ratio: Horizontal Area of Bridge Compared with Horizontal Area of Regenerators	Ports: Area: Air	Ports: Area: Gas	Ports: Area of Ports Compared with Area of Cross-Sect. Outlet	Ports: Area of Ports Gas to Air	Valves: Air	Valves: Gas	Valves: Total Area of Valves Compared to Area of Ports	Stack: Diameter	Stack: Height	Stack: Area	Stack: Diameter to Stack Compared to Height	Stack: Area of Stacks Compared to Area of Ports	Roof: Rise of Arch	Roof: Span of Arch
		Ft.	Ft.	Sq. Ft.	Sq. Ft.	Cu. Ft.	Cu. Ft.	Sq. Ft.	Sq. Ft.	Ratio	Ratio	Ratio	Ratio	Sq. Ft.	Sq. Ft.	Ratio	%	Size	Area	Size	Area	Ratio	%	Ft.	Sq. Ft.	Ratio	%	Ft.	Ft.
	Ingot	5'6	13'6	74.25		186	246	35	46	1 to 1.32	1 to 1.32	1 to 2.12	1 to 2.12	3.75	2.25		1 to 1.66	24	3.14	24	3.14	1 to 1	95						
	Plate	7'0	15'0	108.1		118	118	22	22	1 : 1	1 : 1	1 to 1.06	1 to 1.06	1 to 5.64	1 to 5.64	2.52	2.52	18	1.76	18	1.76	1 to 1.69	143						
	Billet	7'6	21'9	166.6		285	425	76	113	1 to 1.49	1 to 1.67	1 to 2.58	1 to 1.71	1 to 1.49	1 to 2.18	3.93	3.63		1 to 1.08	93	27	3.97	24	3.14	1 to 1.93	101				
		7'0	28'6	143.9		352	352	60	60	1 : 1	1 : 1	1 to 2.45	1 to 2.45	1 to 2.39	1 to 2.39	4.43	4.43		1 : 1		27	3.97	27	3.97	1 to 1.89	111				
	10" Mill Gautier	7'0	15'0	105		110	157	32	45	1 to 1.42	1 to 1.42	1 to 1.51	1 to 1.05	1 to 2.32	1 to 3.28	2.75	1.69		1 to 1.66	61	27	3.97	27	3.97	1 to 1.79	56				
	28" Train "I" Rail	11'0	27'6	302.5	41.78	326	407	29	37	1 : 1	1 : 1	1 to 1.03	1 to 1.07	1 to 8.18	1 to 10.44	12.30	9.75		1 to 1.33	75									
	14" Mill Gautier	9'0	18'0	162		164	219	47	63	1 to 1.33	1 to 1.74	1 to 1.35	1 to 1.01	1 to 2.57	1 to 3.42	3.36	2.08		1 to 1.46	61	27	3.97	27	3.97	1 to 1.45	98				
		8'5	25'3	208.8	45.21	513	576	27	30	1 to 1.11	1 to 1.30	1 to 1.11	1 to 1.90	1 to 2.76	1 to 2.44	1 to 6.34	1 to 7.71	6.09	3.00	1 to 4.97	1 to 2.20	1 to 2.04	2.49	24	3.14	24	3.14	1 to 1.69	49	31'	48" 90°	1.57	1.23	1.24	1 to 1.30	78	10'	61.3"
	Beam	14'0	28'0	392	55.71	543	543	34	34	1 : 1	1 : 1	1 to 1.39	1 to 1.39	1 to 11.6	1 to 11.6	5.90	5.06	1 to 4.97	1 to 2.20	1 to 1.16	85									
		6'0	15'9	94.5		270	364	40	61	1 to 1.38	1 to 1.74	1 to 1.38	1 to 1.74	1 to 1.38	1 to 2.05	1 to 1.55	1 to 2.05	5.23	2.66		1 to 1.97	36	27	3.97	27	3.97	1 to 1				
	Billet	15'6	16'0	216		443	507	74	94	1 to 1.17	1 to 1.28	1 to 1.21	1 to 1.78	1 to 2.62	1 to 2.06	1 to 2.3	1 to 2.91	7.87	6.75		1 to 1.16	85									

Table of Gearing. Table III.

Here is shown a table for use in

estimating the weights of cast iron gears and which applies to ordinary gears, in which the length of hub equals the width of face. The weight of shrouding and of additional length of hub should be added to the weight of the gear as obtained from the table. This table was derived from

Table III. For Spur Gears.

No. of Teeth.	X for Pitch up to 1⅝".	X for Pitch 1⅝" and over.
10	1.00	.09
11 to 15	1.10	1.00
16 to 20	1.20	1.10
21 to 30	1.25	1.20
31 to 40	1.25	1.20
41 to 50	1.30	1.25
51 to 60	1.35	1.25
61 to 70	1.40	1.30
71 to 80	1.45	1.35
81 to 90	1.50	1.40
91 to 100	1.55	1.45
101 to 110	1.60	1.50
111 to 120	1.70	1.60
121 to 130	1.80	1.70
131 to 140	1.90	
141 to 150	2.00	
151 to 160	2.10	
161 to 170	2.20	

W = PFDX. W = weight of gear. F = face in inches. D = PD in inches. P = pitch in inches. X = coefficient for No. of teeth.

the tabulation of a large number of gears, manufactured during a period of years, and is in use by at least several manufacturers of cast gears, who base their prices on the results obtained by its use. If this table has been published before, the writer is not aware of the fact. In any event, it is worth repeating.

Tables on Columns.

Table IV is for the calculation of the safe loads of cast iron columns. Multiply the result by 8 and the result is the ultimate strength of the column. The method of use is shown below.

Table V is intended for the calculation of the safe loads of wrought iron columns, the ultimate strength being obtained in this case by multiplying the safe load by 6. The tables are used as follows:

$$\frac{L}{D} = K$$

where L = length of column inches, D = least dimension of section inches, and K = ratio between length and least dimension of column section.

By referring to the table, opposite "K" will be found the safe load expressed in tons per square inch of section. Multipling this by the area of column section, the result will be the safe load in tons. Tables IV, and V, are not original but were published some years ago in an engineer's pocketbook by Schumann. This book is now out of print, I believe.

Weight of Cast Iron Balls.

In the calculation of the weight of

SAFE LOADS ON COLUMNS. TONS PER SQUARE INCH.

Table IV. Cast Iron.

K = 1—4.987	K = 25—1.951	K = 49—0.714
2—4.950	26—1.858	50—0.689
3—4.890	27—1.771	51—0.666
4—4.807	28—1.689	52—0.644
5—4.705	29—1.611	53—0.623
6—4.587	30—1.538	54—0.603
7—4.450	31—1.469	55—0.584
8—4.310	32—1.404	56—0.565
9—4.158	33—1.343	57—0.548
10—4.000	34—1.285	58—0.531
11—3.838	35—1.230	59—0.515
12—3.676	36—1.179	60—0.500
13—3.514	37—1.130	61—0.485
14—3.355	38—1.084	62—0.471
15—3.200	39—1.041	63—0.457
16—3.048	40—1.000	64—0.445
17—2.902	41—0.961	65—0.432
18—2.762	42—0.924	66—0.420
19—2.628	43—0.889	67—0.409
20—2.500	44—0.856	68—0.398
21—2.378	45—0.824	69—0.387
22—2.262	46—0.794	70—0.377
23—2.152	47—0.766	71—0.367
24—2.049	48—0.739	72—0.358

Table V. Wrought Iron.

K = 1—2.999	K = 25—2.487	K = 49—1.674
2—2.996	26—2.452	50—1.644
3—2.991	27—2.418	51—1.615
4—2.984	28—2.383	52—1.585
5—2.975	29—2.348	53—1.557
6—2.964	30—2.313	54—1.529
7—2.953	31—2.277	55—1.501
8—2.938	32—2.242	56—1.474
9—2.921	33—2.206	57—1.448
10—2.905	34—2.172	58—1.422
11—2.885	35—2.136	59—1.396
12—2.863	36—2.101	60—1.371
13—2.841	37—2.067	61—1.347
14—2.817	38—2.032	62—1.323
15—2.792	39—1.998	63—1.299
16—2.766	40—1.963	64—1.276
17—2.738	41—1.930	65—1.253
18—2.711	42—1.896	66—1.228
19—2.680	43—1.863	67—1.209
20—2.650	44—1.831	68—1.187
21—2.619	45—1.798	69—1.167
22—2.586	46—1.767	70—1.146
23—2.554	47—1.735	71—1.126
24—2.520	48—1.704	72—1.107

Formula L ÷ D = K; Safe load = K × A; L = length of column, inches; D = least dimension of column, inches; A = area of column, square inches; ultimate strength, tons, = safe load × 8 for cast iron and safe load × 6 for wrought iron.

cast iron balls the writer discovered that the formula

$$\left(\frac{d^3}{8}\right) + \frac{1}{9}\left(\frac{d^3}{8}\right) = \text{weight}$$

where d = diameter of ball in inches. The usual procedure of obtaining the weight of a cast iron ball is as follows: $d^3 \times 0.5236 \times 0.263$ = weight, where d = diameter of ball in inches. 0.5236 = constant and 0.263 = weight of one cubic inch of cast iron. Below are compared the length of the two operations, and in them a slight difference may be noted.

$d^3 = 3 \times 3 \times 3 = 27.$

8)27	.5236
	27
9)3.375	
.375	36652
	10472
3.750	
	14.1372
	.263
	424116
	848232
	282744
	3.7180836

In calculating the circumference of circles, the usual way is D × 3.1416 = circumference. For use in plate work and ordinary calculations the method given below will be satisfactory and somewhat shorter. Assuming a diameter of 43½ inches and comparing the two methods, a slight difference may be noted.

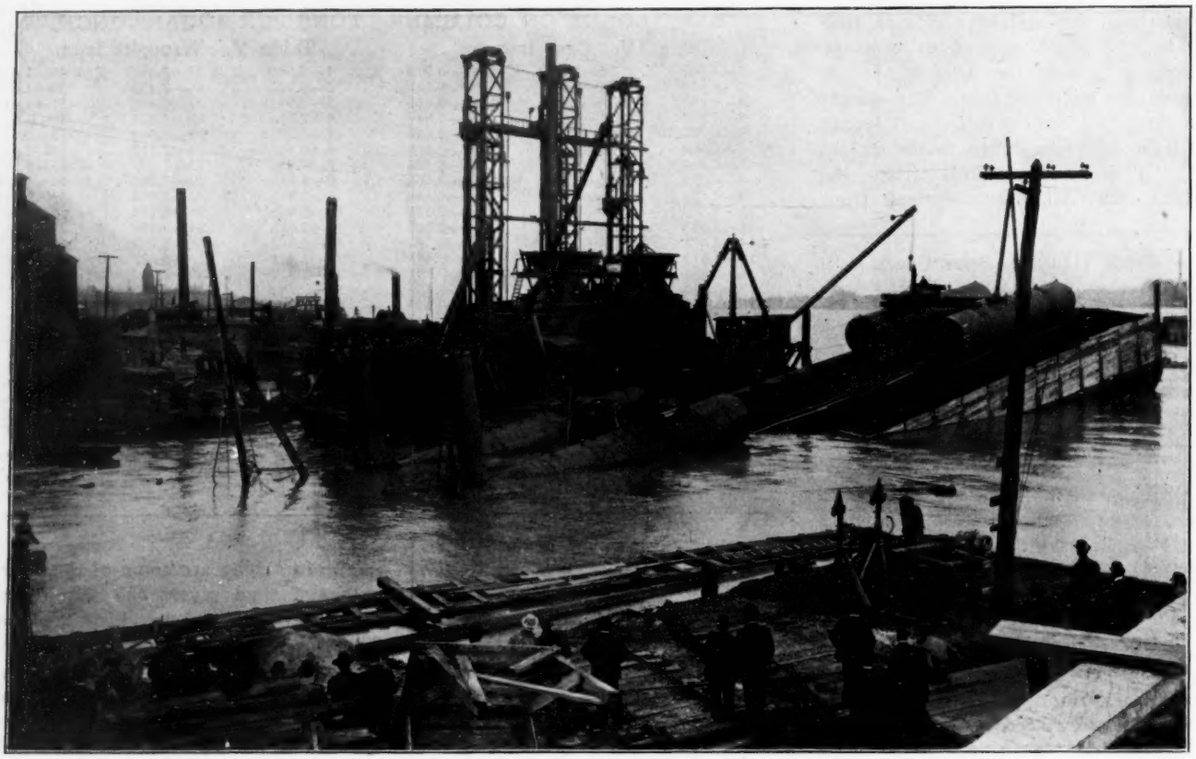
43.5 = diameter.	3.1416
87.0 = diameter × 2.	43.5
6.2 = diameter ÷ 7.	
	157080
136.7	94248
	125664
	136.65960

The foregoing are some of the short cuts and time savers the writer has found convenient in his practice. Every engineer will find use for similar methods and time savers, and the same may be devised from time to time as his practice may dictate. Any kind of a pocket notebook, in which to jot down such notes as may be desired, will do. These notes should then be revised and re-arranged in another book, which is then the permanent record. For his desk reference book, the writer uses a well-bound price book, while for the permanent record, a loose-leaf ledger is used. In this book, the records are entered with a typewriter. This makes a very neat and legible record, and one that may be easily revised as becomes desirable.

The Tool Steel Motor Gear & Pinion Co. has recently completed a plant at Cincinnati for the manufacture of pinions and gears for street car motors. The face of gears and pinions is of tool steel, rendering the wearing qualities high. The new plant is the outgrowth of a smaller one which was found inadequate to the needs of the business.

Bids will be asked for the construction and equipment of an electric light plant at Farmersburg, Ind., by the Tarr Electric Co. as soon as plans can be completed. The directors of the company are A. D. Tarr, W. S. Baldridge and E. W. Jennings.

It is understood that the Midland steel mill of the American Sheet & Tin Plate Co. at Muncie, Ind., will shut down indefinitely or permanently on Nov. 1.



SINKING THE FIRST SECTION OF THE MICHIGAN CENTRAL RAILROAD TUNNEL AT DETROIT.

SINKING THE MICHIGAN CENTRAL TUNNEL SECTIONS.

In the Oct. 17 issue of THE IRON TRADE REVIEW was published a comprehensive description of the tunnels being built by the Michigan Central railroad under the Detroit river. We are enabled to present herewith, by courtesy of the Detroit *Free Press,* a photograph of the first section of that tunnel as it was being sunk into the trench in the river bed on Oct. 1. The four round cylinders on top of the section are the air tanks mentioned in the description of the tunnels, which are used for rendering them more manageable while being sunk. The vertical cylinders having the appearance of smoke stacks are the shafts through which the tunnel is drained.

The Diamond Steel Co. of Wilmington, Del., has representatives at work on the new bar mill for the Portsmouth Steel Co. and are placing orders for machinery. It is understood that, in addition to making tie plates, the new mill will manufacture flash bars.

The Monarch Electric Co., Ltd., capitalized at $20,000, has been incorporated by John R. Lewis, John W. Schlieffers and H. S. Poole, to manufacture electrical machinery at Montreal.

NEW COWING LIFT-BRIDGE AT JEFFERSON ST., CLEVELAND

Increasing channel requirements for the movement and handling of iron ore in the Cuyahoga river, Cleveland, are leading to the adoption of various expedients by the city toward facilitating the progress of the industry. Notable improvements in this line have been the elimination of a curve in the river channel at Jefferson street, which was very close to 300

FIG. 1—LIFT BRIDGE, PARTIALLY OPEN.

degrees by cutting a channel between the two extreme ends of the curve, permitting the free passage of the largest boats drawing 20 feet of water, and the recent erection and opening to traffic of a new and modern lift-bridge at this point which has supplanted a swing bridge.

The structure is the only example of its particular type in the city and is a two-leaf, revolving, lift-bridge designed by the Cowing Engineering Co., under the patents of John P. Cowing, of Cleveland. The bridge has two 6-foot sidewalks, its trusses are 40 feet from center to center and 152 feet between front bearings, giving a clear water-way of 120 feet at an angle of 12 degrees to the longitudinal axis of the bridge. The supporting end of the bridge is a semi-circular revolving segment having a bearing surface adapted to rest and roll on 29 ten-inch anti-friction rollers 16½ inches long, which rest and roll in a cradle transmitting all the moving load uniformly to the foundation.

The motive power for operating the bridge is two 25-horsepower direct-current electric motors for each leaf, one on each leaf being required for operating under ordinary conditions while the other is held in reserve for emergencies. The power is transmitted to the main rack and pinion through a train of gears from a main equalizing gear on each leaf of the bridge. This latter gear takes the first reduction from the motor, thereby transmitting the same amount of power and motion to each of the two rolling segments of the main trusses of each leaf. To prevent lateral displacements, the rollers are recessed and held in alignment by distance bars composed of two channels.

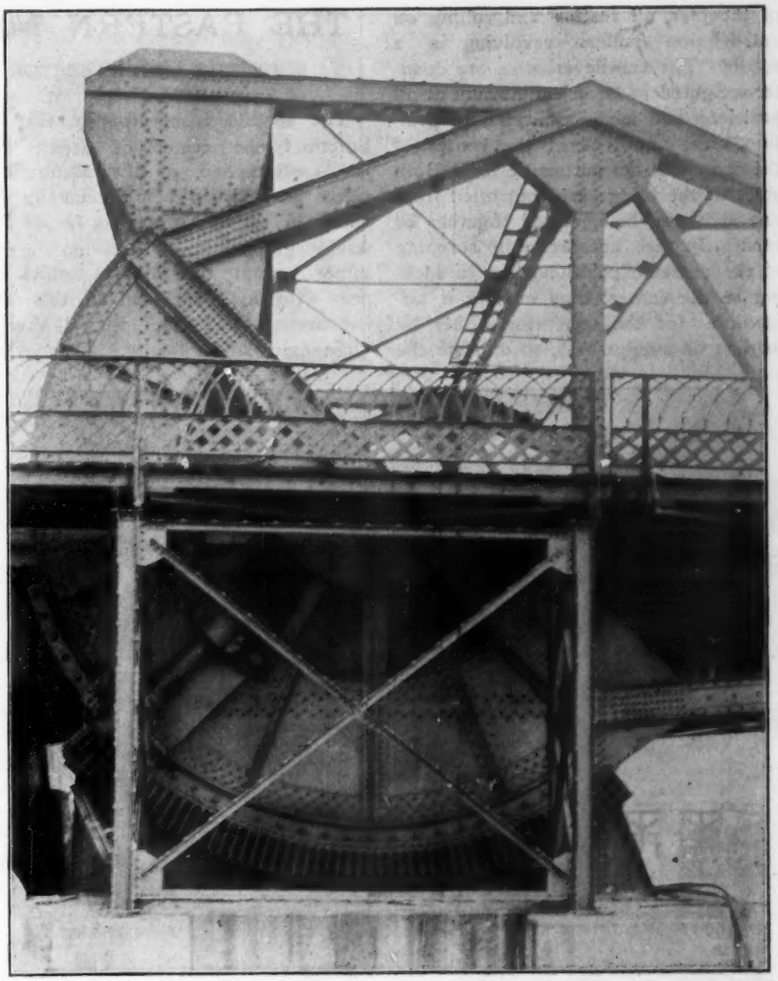


FIG. 3—MAIN ROLLING SEGMENT OF BRIDGE.

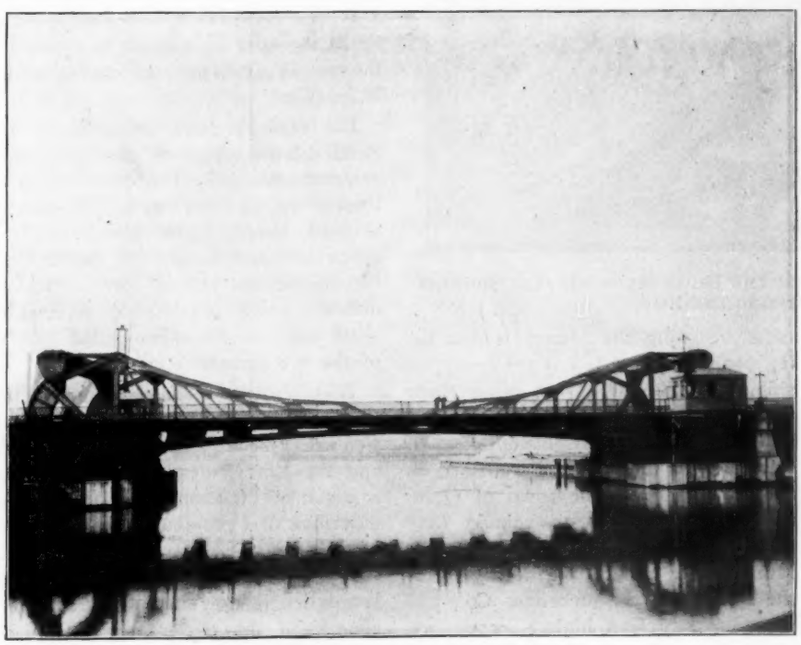


FIG. 2—LIFT BRIDGE IN A CLOSED POSITION.

The center of gravity of the moving leaf is at the center of a circular segment, the counterweight being partly above the floor and partly below it and consisting of pig iron set in Portland cement in a steel box with covering and riveted to each truss. There are some cast-iron blocks below the floor for adjusting and properly balancing the bridge. When the bridge is closed, the dead and live load reactions are taken by a front bearing on the cradle. The uplift from the load upon that portion of the lead which is between the center and the front bearing is taken by an anchor bar in the rear foundation and that portion between the center of the rolling segment and the abutment is taken by an electrically-operated tail lock. The total weight of steel in the bridge proper is estimated at 506 tons and in the counterweight 800 tons.

The bridge has the advantage, at all times, of keeping the dead load and the counterweight over the center

of the pier, all resting and rolling on anti-friction rollers revolving in a cradle. The cantilever arms are counter-weighted to be in equilibrium at all positions and when lowered into position meet and lock at the center of the span with an automatic lock. Both arms of the bridge are controlled from one side, can be operated together or separately, are automatic in stopping at the extreme positions and in locking at the center, thus making it impossible for the operator, either by neglect or carelessness, to damage the bridge. The structure is designed to carry a street car track loaded with 80,000-pound cars.

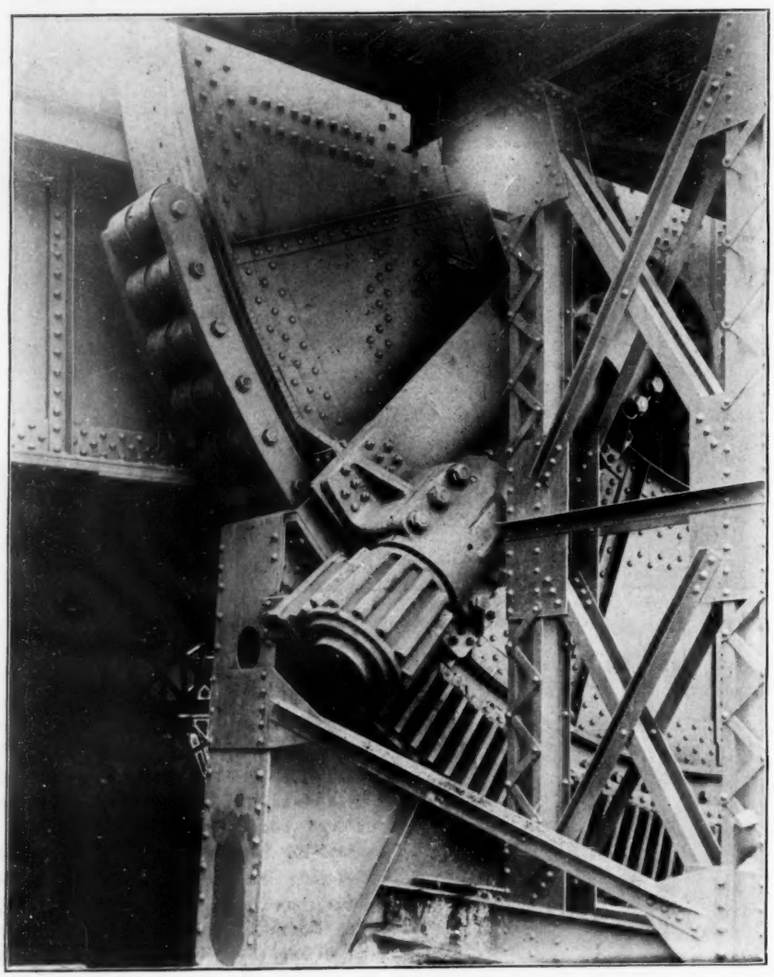


FIG. 4—DETAIL OF THE ROLLER UPON WHICH THE BRIDGE REVOLVES, ALSO SHOWING RACK AND PINION OPERATING THE BRIDGE.

J. A. Joyce, chief engineer of the Cowing Engineering Co., superintended the designing and construction of the bridge.

The Lowell Machine Shop, organized under the laws of Massachusetts, in its report to the commonwealth of its condition, March 30, 1907, shows total assets of $2,293,183, compared with $2,041,013 in 1906.

THE EASTERN MENOMINEE COUNTRY

BY THE MINING EDITOR OF THE IRON TRADE REVIEW

The section from Norway east to Loretto is the center of activity of the eastern end of the Menominee range as well as being centrally located. West of Norway as far as Pewabic group, there are no active mines except the Munro, which is near Norway. Included in this idle list are the old Keel Ridge, Vivian, Quinnesec and Cundy. The Few mine adjoining the Munro is just being opened up and is not yet ready for shipment. Shipments are being made from the stock pile of the Vivian, but the temporary general abandonment of this part of the range is reflected in the appearance of the town of Quinnesec, which seems to remain only because too tired to move. The Munro is a milling pit belonging to the Buffalo & Susquehanna Co. and contains only lean high siliceous ore. This is mined very cheaply, however, and the cost of opening up the deposit was a minimum with only a few feet of surface to strip. All of the ore has to be crushed and the amount used is limited. The Few mine on the next forty to the west is owned by Marinette interests and has been opened up on one level at a depth of 125 feet. So far as shown up, the ore is for the most part of the same quality as that in the Munro though lying somewhat deeper under the surface. A lens of high grade ore has been found, however, which, existing in very small quantity at the depth of 125 feet, gives promise of widening out at the greater depth to which its pitch and dip carry it down. The formation is well defined and further development is to be carried on. The property is well equipped for its work.

The Aragon Mine.

At Norway the Aragon mine of the Steel Corporation is shipping steadily from both No. 4 and No. 5 shafts. Both shafts have steel headframes and a new hoisting plant of Sullivan engines at No. 5 shaft was included in the improvements made something over a year ago. Ore from the No. 5 shaft is distinctive in that it is the only ore which is shipped by the Wisconsin & Michigan railway which road offers advantages in shipping to Chicago via the car ferry. The unique characteristic of the Aragon mine is the great folding in which the ore has been distorted with the formation. In many places the cross section would be a regular sine curve and the opening up of the mine as a result has been an interesting problem. Electric haulage is installed.

The Saginaw mine, which is the old Perkins, was reopened last year and shipped some ore. This year it is continuing to do very well, has already shipped about 22,000 tons and will probably mine a total of 30,000 tons for the season. It is located almost directly north of the No. 4 Aragon shaft and lies in a projecting corner of the ore formation.

The Vulcan group includes the Curry on the west, the West Vulcan, Central Vulcan, East Central Vulcan and the East Vulcan and extends for a distance of about two miles. As described in a previous issue, the Penn Iron Mining Co., under which name the Cambria Steel Co. operates, the properties is now making a complete change in the power from steam to electricity, but even before the new power house was built the plan of op-

eration was on a large scale in keeping with the size of the mines. Many interesting devices have been employed, among them the cable railway for handling the ore from the shaft to the loading track.

On the Hillside.

The shafts are well up on the side of the hill and instead of running the railroad tracks up to the shaft, which would have complicated the layout of the shafts and surface buildings, the ore is brought down to loading pockets and through them to cars on the main line level. From the shaft house long trestles have been built, the one at the West Vulcan, for example, being at least 500 feet long, double tracked and with six loading pockets at the end. The tracks run into the shaft house alongside of the shaft mouth. The shaft has two compartments of the same size, one for the cage and the other a double skip compartment. The skip dumps into a double hopper bin by means of which the ore can be diverted to either track. One ore car operates on each track and is hauled by a separate cable and drum. The cable system consists simply of two separate single cables with opposite ends fastened to opposite ends of the cars and a half dozen turns of each cable wound round the electrically operated drums. The skip hoists work in balance and the cars operate at a speed which enables them to make the run out and back in the same time a skip goes up and down. The time required for dumping is practically negligible, as it is done automatically as the cars run over the pockets. The cars are side dumping with a hopper bottom and the doors are opened at the proper time by the contact of a releasing block on the car with a knock-off frame at each pocket alongside of the track. Each pocket is used for a different grade of ore and to provide for dumping the car in the right pocket the knock-off frames are set at different heights beginning with the lowest at the first pocket and increasing toward the last. The release block on the car is adjustable to these various heights and is set by the man at the shaft for whatever pocket is desired before the car starts out. The same cable system is used for stocking the ore in the winter. At the east Vulcan, the cars run down a steep incline from the shaft before getting on to the trestle.

Trammed With Mules.

At the East Central Vulcan, drifts have been driven into the side of the hill directly into the ore body and the ore is trammed out with mules. The mine cars are run out over a pocket built on the side of the hill and dumped into railroad cars. The work has all been on one level up to this time, but a shaft is to be sunk in the near future. At the Curry, a new shaft is being sunk. A great deal of difficulty was experienced in getting it started because of quicksand. For a depth of from 30 to 40 feet the shaft has been sunk with a cross section about 15 feet square and the lining cross braced. At the bottom of this, the sinking has been continued with a centrally located shaft, about 4 x 4 feet, which is now safely down to a considerable depth.

East of the Vulcan, the Loretto is the only producing mine. The Breen still farther east at Waudecah was revived this year by the Mineral Mining Co., but work there ceased a week or so ago. The Appleton adjoining the Loretto had been worked and had shipped about 12,000 tons in 1892, '93 and '95, but was abandoned and last year the property leased to the Loretto Iron Co., which is drifting into the Appleton property, now called the Eleanor, from the Loretto workings. The old Appleton workings have not been entered or the mine pumped out.

Diverting a River.

The most interesting thing about the Loretto just now is the problem of diverting the Sturgeon river, which runs directly above the mine, and also Pine creek which runs into the Sturgeon. Two ways are being considered, each of which has advantages over the other, but in either case the removal of several hundred thousand yards of dirt will be necessary in digging the new channel. Most of the work will be done by contract, the rest by the mining company with its own steam shovel.

A new idea in mine locomotives is to be worked out at the Loretto. Air locomotives built by the H. K. Porter Co. of Pittsburg are to be used. In contrast to the system in most mines where all the tramming and hoisting is done from one level and all the ore is dropped to that level through raises, this scheme provides for power tramming on several levels. The usual motor is too large to be transferred from level to level as desired, but a smaller engine has now been designed of such a size that it may be conveniently run onto the cage and transferred to whatever level is desired. The engine will still be large enough to haul several cars, will be able to make a trip of 1,500 feet and return with every charging and will require only a minute and a half for recharging. It is an arrangement that has in it, certainly, unusual flexibility.

A re-enforced concrete chimney has just been erected and while the same construction is used in the copper country for chimneys, this also is something of an innovation for the iron ranges. Two new boilers are being set up. Some drilling is being done around the mine, ore has been shown up and in general the mine looks very well.

WELSH TIN PLATE TRADE.

In a report from Swansea, Consul J. H. Johnson states that the Welsh tin plate trade continues to be the staple industry of that large manufacturing district, concerning which he says:

The trade depression here some time ago necessitated the Welsh manufacturer seeking fresh outlets, and efforts thus made proved very successful. The manufacturers are also consistently and regularly introducing many improvements into the finishing departments of their factories and have thus succeeded in increasing the production with reduced labor, securing better results as regards surface brightness of the finished plate.

Quite a recent introduction to the tinning house is a patent riser and lister, but this invention is still in an experimental stage.

The trade is in a flourishing condition at present, with nearly 450 mills in full operation here, and manufacturers are flooded with orders. The expansion in exports of tin plates from Swansea for the first eight months of the current year, compared with the preceding year, favor the present season no less than $4,008,064, representing an increase of 34,493 tons. The exports of black plates for the same comparative periods also show a great improvement. The tonnage increased from 240,458 to 274,951, and the value from $15,331,070 to $19,350,-134. The United States continued as the best customer of Welsh black plates, taking $3,013,551 worth for the first eight months of 1907, an increase of $859,974.

WILL MEET IN TORONTO.

At a meeting of the executive board of the American Foundrymen's Association, recently held in New York, the invitation of the Canadian foundrymen to meet in Toronto next year was accepted. The convention will be held during the first week in June, as heretofore. The Canadian members of the society are already making arrangements for the entertainment of the visitors.

A DOUBLE-HEAD MULTIPLE-SPINDLE AUTOMATIC TURRET MACHINE

In THE IRON TRADE REVIEW of Nov. 7, 1905, was published a description of an automatic turret machine built by Geo. G. Prentice & Co., New Haven, Conn. The machine comprised four horizontal spindles carrying tools which worked on pieces held in a chuck carried on the tail-stock of the machine. Four successive operations were completed simultaneously in this machine.

The accompanying illustrations show a machine which is a development of this earlier tool and which possesses a number of the features of it. It has, however, two heads and is made in larger sizes, an 8-spindle machine being built if desired. The operations performed by this tool include boring, facing, drilling, turning, threading and other operations, and can be performed on both ends of a piece at one setting in the chuck. The standard machine has three spindles in each end, between which is a chuck having four sections or chuck jaws. The spindles carrying the tools are in line with the different sections of the chuck, except the upper section, where the operator removes finished work and inserts an unfinished piece, while the machine operates constantly on a piece of work in each of the other sections of the chuck.

The machine operates as follows: The operator before starting the machine places an unfinished piece of work in the upper section of the chuck. The tool is then started, and the chuck indexes automatically, bringing the work in line with the tool in the first two spindles. The tool is then advanced and the first operation performed. Meanwhile, the operator has placed another piece of unfinished work in the section of the chuck which is then on top and when the chuck indexes, the second piece is brought in line with the first spindles, the first piece then being opposite the second spindles. The tools in these four spindles engage the work, and on the completion of the operation on both pieces, the chuck indexes again and the third piece, which meanwhile has been placed in the top section of the chuck, is brought to the first spindles. This operation continues until three or four pieces are being operated on at the same time, each receiving two different operations. When the chuck indexes so as to bring a fourth or fifth piece to the first spindle, the first piece having passed through all the operations is again at the top of the chuck and is removed by the operator, who replaces it with an unfinished piece. The machine continues to work in this manner, and need not be stopped, except to replace dull tools with sharp ones.

In the 8-spindle machine comprising four spindles at either end, the first spindle at the front is used for such operations as drill starting, chamfering, etc., and not for the heavy cuts which can be taken by the two lower spindles. These lower spindles are yoked together and fed to the work as follows: Inside of the bed runs a main cam shaft on which are drums with tool steel cams drilled and screwed at the proper angle to give the required cutting feed or advance of the spindles toward the work. On the under side of the first and second spindle yoke is a tool steel roll against which the cam bears as the drum revolves. As the roll and cam are set close together, there is no leverage or lost motion and the drive is more than ample for the heaviest cuts that can be taken in the machine. After the completion of the operations a cam set on the reverse angle draws the spindle yoke back from the

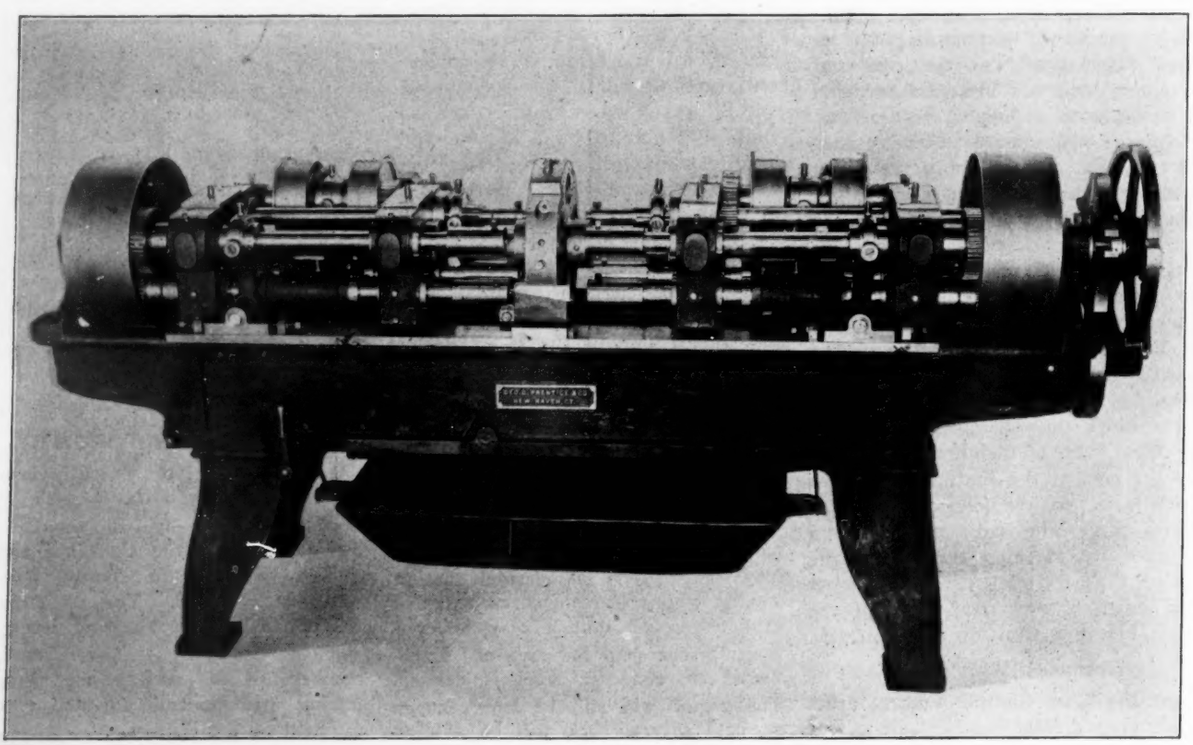


FIG. 1—EIGHT SPINDLE DOUBLE HEAD PRENTICE FORMING LATHE.

work and at the same time the chuck is indexing for the next operation automatically, and each piece of work is brought in line with the spindles to perform the succeeding operations.

The entire operation of the machine is automatic, and it is timed so that the indexing occurs as soon as the longest single operation on any piece of work is completed. All the shorter operations are completed within this time, and thus the time of finishing a piece of work on both ends is the elapsed time of the longest single operation in addition to the few seconds taken by the chuck in the indexing and advancing of the tools. It is claimed that these machines are finishing work in less time than is required by turret, chucking and hand screw machines, the saving in some cases amounting to 70 or 80 per cent.

As the chuck indexes toward the front of the machine, the first or roughing spindles are at the front and the finishing and threading spindles follow. The threading mechanism consists of a sliding tap or die holder with a forked lever connecting with the cam to start the lead of the thread. The driving mechanism consists of forward and reverse driving pulleys with friction expanding rings. A clutch spool between the two pulleys shifts the drive from forward to reverse and vice versa by means of a lever connecting with a tripping disc on the cam shaft. Dogs are set on this disc to trip the lever at the proper time. The feed of the tool toward the work is accomplished by means of a lever and cam. The lever is forked at the upper end and is fitted with a bronze ring-shoe engaging with a flange running around the tap or die holder. The lower end of the lever has a cam roll, which engages with forward and reverse angle cams. The tap is driven the required number of turns into the work, when the reverse is automatically engaged and the tap withdrawn.

The proper cutting feed for different kinds of metal is obtained by change gears, worm and worm wheel connecting with the main feed shaft on which all cam drums are placed. The spindles are back geared and have ample driving power for all work within the rated capacity of the machine. The extra front spindles in the 8-spindle machine are operated by a forked lever and cams for feeding and reversing in the same manner as the threading tool feed and reverse. While the two heads of the machine operate in the same manner, they are not limited to the same kinds of cutting operations. Thus in one head of the machine, the tools may be boring, facing and tapping, while in the other head chamfering, turning, facing and outside threading may be done at the same time. The camming is simply timed so that the indexing of the chuck takes place as soon as

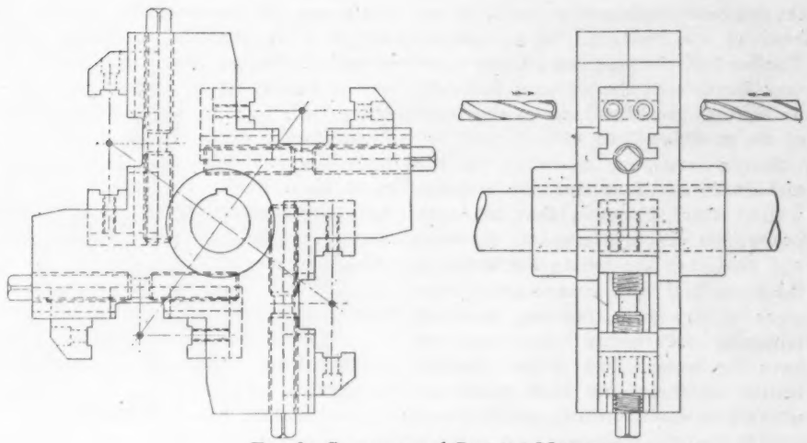


FIG. 3—CHUCK FOR 6-SPINDLE MACHINE.

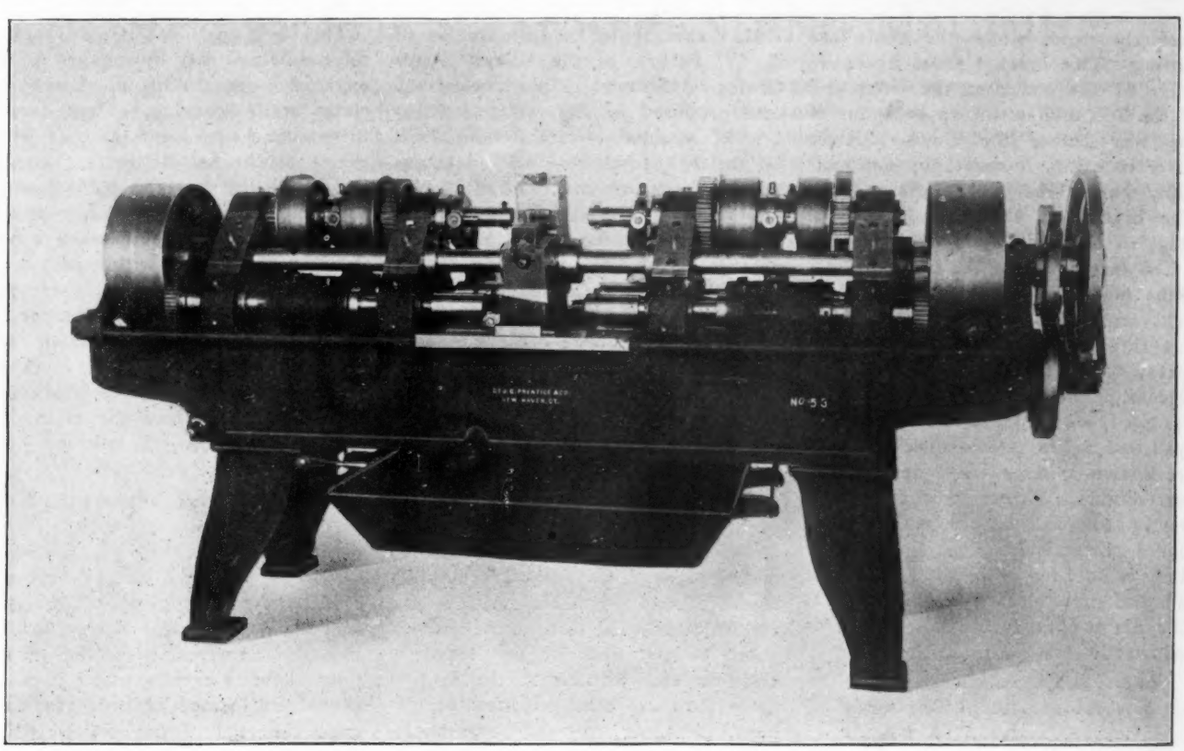


FIG. 2—SIX SPINDLE DOUBLE HEAD PRENTICE FORMING LATHE.

the longest single operation in either head of the machine is completed. The feed of the tool toward the work may be thrown out of gear instantly by shifting the hand lever at the front of the machine.

Special attention is called by the makers to the fact that the spindles which carry the tools that take the heavy cuts are rigidly yoked together, and that they are fed to the work by the cam roll and cam setting very close to the yoke, making the feed powerful and rigid. These machines have the same chuck steady bracket feature as the single head machines, which relieves the chuck of all vibratory and torsional strains and holds it perfectly rigid, while the tools are cutting. This bracket slides under the ledge of the chuck at the front end of the bed, and is thrown back out of the way before the chuck indexes. After indexing, it moves up automatically before the tool starts cutting. The bracket is shown on the front ledge of the bed.

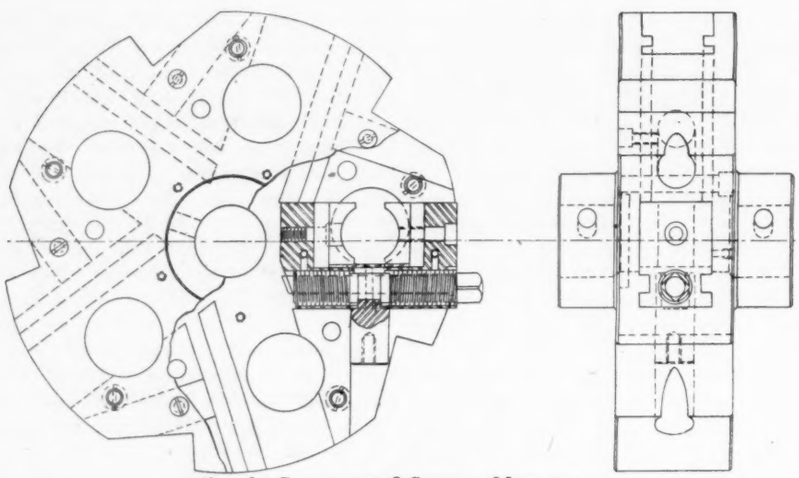


FIG. 3—CHUCK FOR 8-SPINDLE MACHINE.

The three sizes of the 6-spindle machine made are known as No. 52 for light work, No. 53 for ¾-inch pipe size threads and smaller, and No. 54 for two inches down to ¾-inch pipe threads. The same machine is also designed with four spindles in each head and a five section chuck. These are known as sizes 42, 43 and 44, and correspond in threading capacity and weight to Nos. 52, 53 and 54 machines, respectively. This style of machine is better adapted for the bicycle hub and gas and electric fixture work. The net weight of the machine is as follows:

52.....2,300 pounds
53.....4,400 pounds
54.....7,500 pounds

With these machines combination tools can be furnished by means of which it is possible to finish with three spindles as many operations as can ordinarily be performed in a machine with four to six spindles. The illustrations, Figs. 3 and 4, respectively, show a 4-jaw and 5-jaw chuck used respectively with the 6 and 8-spindle machines. It should be noted that with the 6-spindle machine the work is inserted at the top of the chuck, while with the 8-spindle machine the work is inserted at the side.

1906 Coal Production.—The total production of coal in the United States in 1906 reached 414,157,278 net tons, against 392,722,635 net tons in 1905, according to the compilation of E. W. Parker, of the United States Geological Survey. The value of the coal produced in 1906 reached $513,079,809, against $476,537,294 in 1905. Of the 1906 total 342,874,867 net tons were bituminous coal, and 71,282,411 net tons Pennsylvania anthracite coal, corresponding with 315,062,785 net tons bituminous and 77,659,850 net tons Pennsylvania anthracite coal in 1905. Of the 1906 production, 46,156,301 net tons were made into coke comparing with 42,412,328 net tons in 1905.

Ore Unloading Record.—The Lorain Steel Co., Lorain, O., on Oct. 23 unloaded the steamer J. C. Wallace of 10,092 gross tons of ore in 6 hours and 24 minutes, using four 10-ton electric Hulett ore unloaders built by the Wellman-Seaver-Morgan Co. In the hold only 22 men were used on about 25 per cent of the cargo in cleaning up. This is at the rate of more than 394 tons per machine, per hour, averaging over the entire cargo, and is one of the best records made.

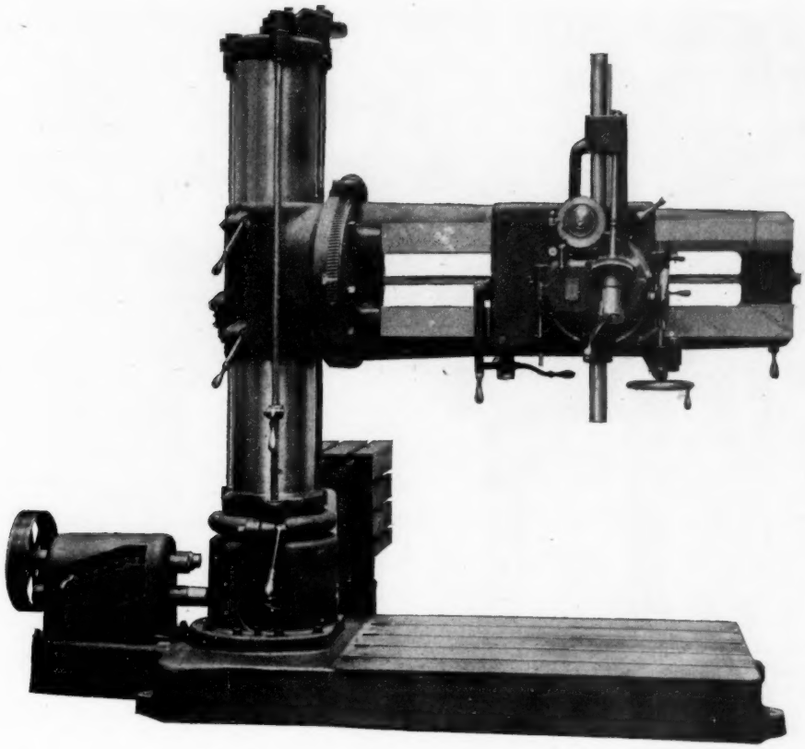
A NEW UNIVERSAL BICKFORD RADIAL DRILL.

The accompanying engraving illustrates a new line of universal radial drills which the Bickford Drill & Tool Co., Cincinnati, is just placing on the market. The chief characteristic claimed for the machine by its maker lies in the design of the arm which is claimed to offer far greater resistance to the combined stresses of twisting and bending than is attained with any other style of arm it has hitherto been able to evolve. This feature, according to the Bickford company, combined with the exceptional facilities which the open form of arm offers for the introduction of a driving mechanism commensurate with the strength, power and durability obtainable in the other parts, marks a noteworthy advance in universal radial drill construction—obtaining, for the first time in its history, a degree of efficiency equal to that of a plain machine.

The sleeve is mounted on a stationary stump which extends up to and has a bearing at the top of the machine. This is equivalent to a double column, and affords that stiffness in the machine which is so essential to true work. The arm may be rotated through a complete circle on its girdle and the head may also be rotated through a complete circle on its saddle. These features permit the drilling of holes at all angles radiating from the center of a sphere.

The back gears are located back of the saddle and may be engaged or disengaged from the front of the machine while running. They furnish three changes of speed, each of which exerts at the spindle more than two and one-half times the pulling power of the next faster one. The spindle has 15 changes of speed when a cone drive is used and 24 with a gear drive. Both hand and power feeds are provided together with quick advance and return, safety stop, automatic trip, dial depth-gage and hand lever reverse. An engraved plate attached to the speed box shows the method of obtaining the proper speeds for different diameters of drills.

The depth gage answers a double purpose; besides enabling the operator to read all depths from zero, which does away with the usual delays concomitant to scaling or calipering, it supplies a convenient means for setting the automatic trip, the graduations showing exactly where each dog should be located in order to disengage the feed at the desired points. The automatic trip operates at as



NEW BICKFORD UNIVERSAL RADIAL DRILL.

many different points as there are depths to be drilled at one setting of the work; in addition, it leaves the spindle free, after any intermediate tripping, to be advanced, or raised and advanced, or traversed its full length, without disturbing the setting of the dog. It also throws out the feed when the spindle reaches its limit of movement.

The feeding mechanism furnishes eight rates of feed, ranging in geometrical progression from 0.007-inch to 0.064 inch per revolution of spindle. Any feed is instantly available, and loss of time incident to the shifting of a belt, or to operating under a feed of unnecessary fineness is eliminated. An engraved plate attached to the head shows the operator how to obtain each of the feeds.

The tapping mechanism is located on the head, and permits the backing out of taps at any speed with which the machine is provided, regardless of the speed used in driving them in. This mechanism is fitted with a friction clutch operated by a lever, the handle of which extends around under the arm within convenient reach of the operator.

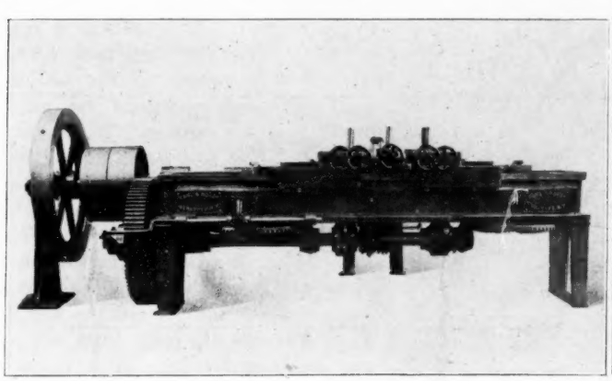
The driving mechanism is encased in a box made fast to the base of the machine, and consists essentially of a pulley, a cone of seven gears, a ratchet, a ratchet gear and operating lever, the mere shifting of which from one notch to another furnishes any one of eight speeds. This box, taken in connection with the back gears on the head, gives the operator a choice of 24 carefully selected speeds each of which is instantly available. The machine is furnished as either a half or full universal, each of which styles is made in three sizes, viz., 4, 5 and 6 feet.

A NEW TYPE OF CRANK BENDING MACHINE

The accompanying illustrations show an interesting and novel form of crank bending machine, which is the invention of W. E. Kane, Syracuse. The object of the machine is to form one-piece cranks without upsetting or stretching the material at any stage of the bending. The machine is built to make any size or throw of crank, making all succeeding cranks exactly similar and in perfect alignment.

The construction of the machine is clearly shown in the illustrations. The bed consists of a T-shaped casting supported on legs, carrying underneath three bevel gears operated from shafting carrying bevel pinions suspended below the bed and driven from fast and loose pulleys through gearing at one end of the machine. The crank is formed by the simultaneous motion of three dies, two of which move in line with each other, the third one moving at right angles to the line of the other two, sliding along the leg of the T of the bed. The dies are operated by cams driven from the vertical shafts of the large bevel gears heretofore mentioned.

The illustration, Fig. 4, shows the



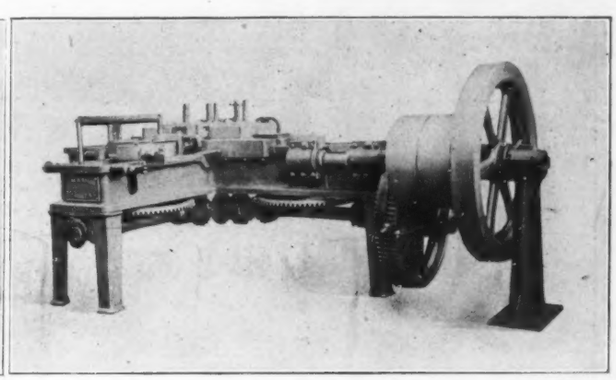


FIG. 1—FRONT OF KANE & ROACH CRANK BENDING MACHINE. FIG. 2—BACK OF KANE & ROACH CRANK BENDING MACHINE.

form of die and cams used in the machine. The central die is caused to move forward after the bar to be bent has been placed in it, while the two outer dies approach each other at the same time as the middle die is moving. The rate of speed of these three dies is proportioned so that they will move at exactly the same speed at which the metal in the shaft is drawn into the cranks. This is accomplished by properly constructing the cams which operate the dies. At the beginning of the movement, the cross die travels about five times as fast as the end dies. At about the middle of the stroke, the speed of all three dies is about equal, and near the end of the stroke the cross die moves at only about one-third of the speed of the end dies.

The machine is semi-automatic in operation, in that after it is started, it will go through a complete cycle, forming a crank and then stop. The material is, of course, bent hot and the machine is so arranged that the hot shaft can be locked in the dies quickly and the machine started by throwing the small lever shown at the front of the bed. The cams make a single revolution and the machine then stops. The time occupied in forming the crank is about six seconds, and about ten to twelve seconds are required to insert and remove the piece. This gives the machine a capacity of about three cranks per minute.

In order to make cranks of different diameters or different lengths of throw, different dies and cams are required for each size, as the length of throw of the crank is determined by the maximum radius of the cam. It is also adapted by slight changes to make cranks of one, two, three or more throws, either in alignment or set at varying angles; either square or round stock may be used. The machine is built by Kane & Roach, Niagara and Shonnard streets, Syracuse, N. Y.

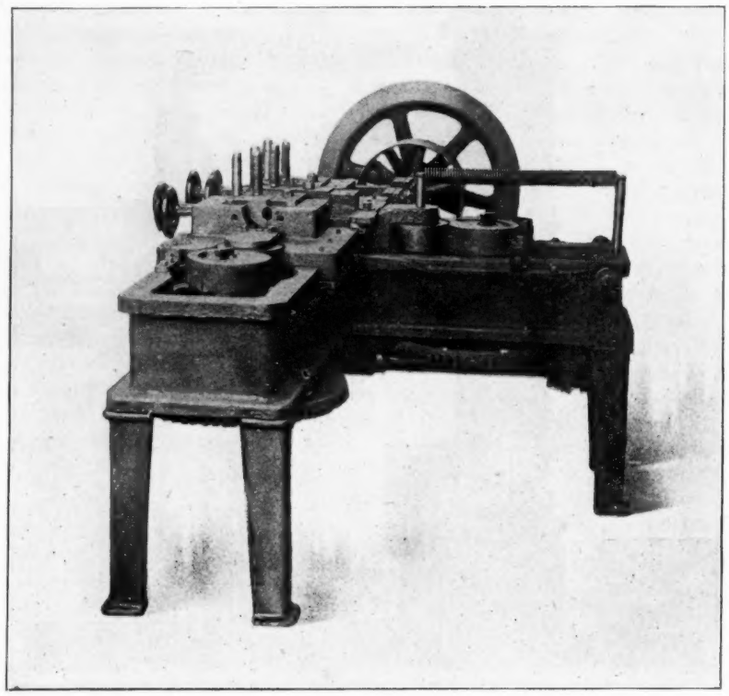


FIG. 3—END VIEW OF KANE & ROACH CRANK BENDING MACHINE.

A compilation of the authorized security issues in the United States since Jan. 1, 1907, shows the unparalleled total of $1,928,968,500, exclusive of government bonds, says the New York Journal of Commerce. In railroads a total of $1,344,677,600 in notes, bonds and stocks was authorized, and $695,036,000 was issued. In industrials $389,021,000 was authorized and $330,352,100 issued. The grand total shows $1,733,699,500 authorized and $1,025,388,100 issued. Municipalities authorized the remaining issues.

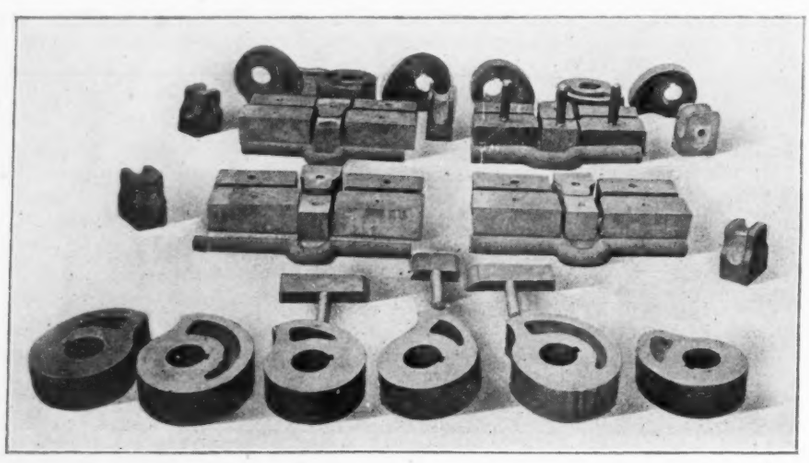


FIG. 4—CAMS AND DIES FOR KANE & ROACH CRANK BENDING MACHINE.

A BOX-SHAPED STEEL TIE.

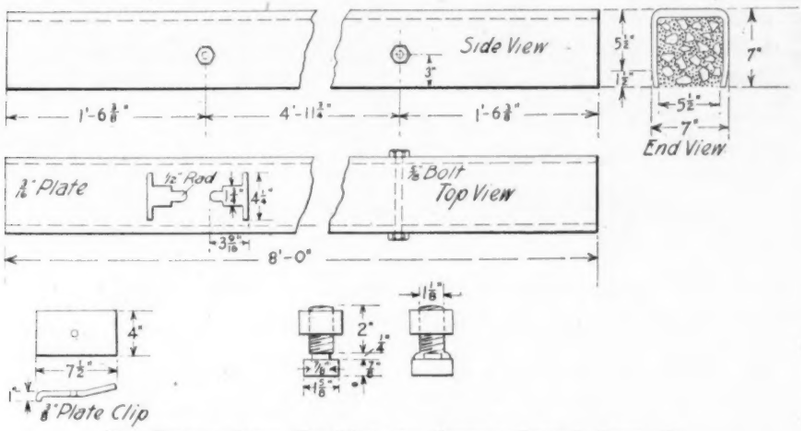
There have recently been a number of very gratifying tests made of the American steel tie manufactured and sold by the Central Iron & Steel Co., at Harrisburg, Pa., under the patents of the American Railway Steel Tie Co. Some experiments are also under way on the Pennsylvania railroad and at various plants. The performance of the tie in the yards of the Central Works, where it was subjected to the extensive daily traffic of a busy establishment was noteworthy. Ties have been in service for over five years and are just as staunch as when put down.

The tie is made under the design invented by John G. Snyder, of Altoona, Pa., the Central company having devoted a building 70 by 300 feet to its manufacture. The tie is a steel shell, or plate fashioned into any shape desired. It is generally made of three-sixteenths steel and formed into the dimensions of the ordinary standard wooden railroad tie, except that it has no bottom. If desired it is painted, the bolt holes having been previously prepared. The tie is then filled with a mixture of asphaltum and broken stone. The rail is fastened by an adjustable clip formed of a ⅝-inch steel bar, one end being burned down into a slot in the tie. This prevents the clip from slipping and it moreover acts as a brace as well as a fastening owing to the manner in which it is attached to the bot-

tom of the rail. For the clip there is a special bolt and washer.

Completed, the tie weighs from 300 to 500 pounds and can be used as a substitute for wooden ties with good results. It lasts from six to ten times as long without need of repair.

Railroad men who have examined the tie say that it is admirably suited for the heavy freight business which



BOX SHAPED STEEL TIE MADE BY CENTRAL IRON & STEEL CO.

characterizes railroad operations today. It has sufficient weight to sustain the track and the asphaltum filler coming into contact with the road bed enables tamping to be done with ease.

Gen. Otto H. Falk, vice president of the Falk Co., Milwaukee, has been elected a director of the Wisconsin Telephone Co.

SPECIAL BORING, FORMING AND TURNING LATHE WITH TURRET HEAD

The accompanying illustrations show a 26-inch turret head boring, forming and turning lathe recently designed and built by the W. P. Davis Machine Co., Rochester, N. Y. It is a machine especially suitable for use in manufacturing plants which have to finish a large number of duplicate pieces of a given size. Six operations or more can be performed on a piece before it is removed from the chuck. These operations include boring, facing, forming, turning and threading. All threads may be cut from 2 to 32 per inch by use of either the carriage or the ram.

The turret has an open center, enabling a mandrel to be passed entirely through it. An automatic stop is provided for each face of the turret, and any face can be tripped at any desired point in the length of the bed. The carriage has a turret mounted on a cross slide, so that facing as well as turning can be accomplished. An automatic trip is provided on the carriage by which a stop is obtained on each of the four sides of the turret.

The carriage can be operated at the same time as the ram or turret carriage, allowing two operations to be performed at the same time. Both carriage and ram having separate drive, and each having a screw or rod feed, can be handled at the will of the operator.

The main turret is 14 inches in diameter and is provided with six 2½-inch holes. The turret slide has a bearing of 30 inches in length on the bed. The greatest distance between the face of the chuck and the face of the turret is 47 inches. A special heavy four-jaw independent chuck is furnished with each lathe, and a friction head is provided, together with a positive drive to the back gear. The triple gear meshes into the face plate, when desired. Six instantaneous quick change feeds are provided and the spindle has 24 speeds.

Fig. 2 is a side view of the machine with part of the frame removed, showing the quick change feed mechanism as well as the reversing gears,

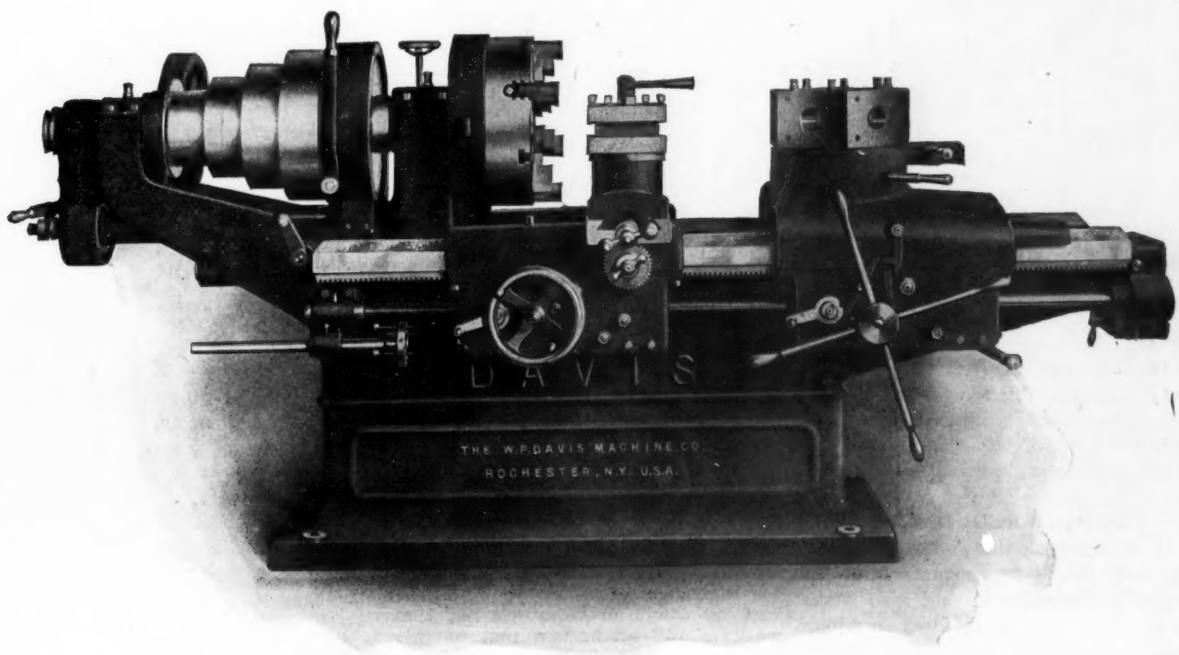


FIG. 1—DAVIS 26-INCH BORING, FORMING AND TURNING LATHE WITH SPECIAL HEAD.

that are operated by a foot shifting device, conveniently located on front of machine as shown. Fig. 3 shows the rear end of machine, and Fig. 4 shows the end view with change gears for thread cutting, automatic stops, reverse shifter, etc.

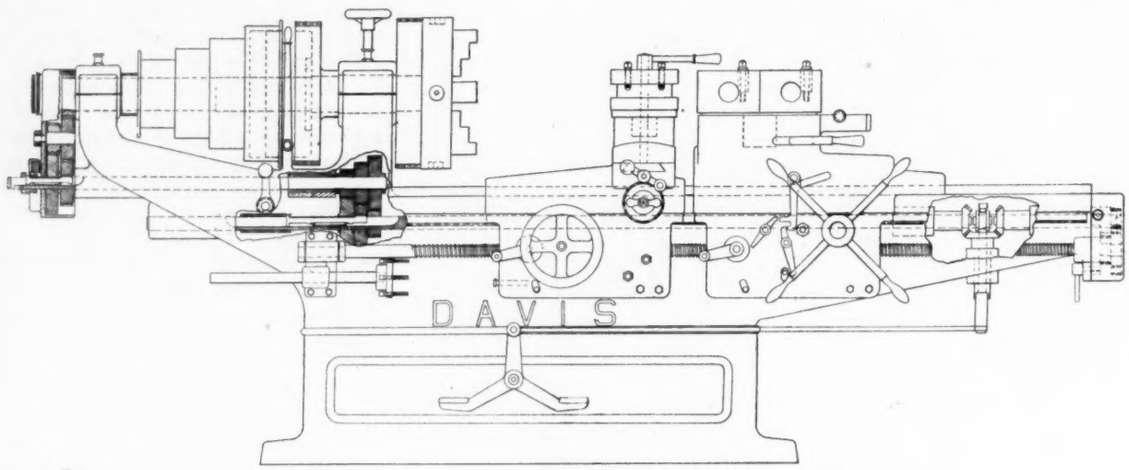


FIG. 2—DAVIS 26-INCH TURRET MACHINE SHOWING FEED MECHANISM.

The bearings are liberally proportioned, the front spindle bearing having a diameter of 4½ inches and a length of seven inches. The corresponding dimensions of the back spindle bearing are 3⅞ inches and 5¼ inches. The spindle has a 2-inch hole. The cone is provided with four steps for a 4-inch belt. The net weight of the machine is about 7,000 pounds.

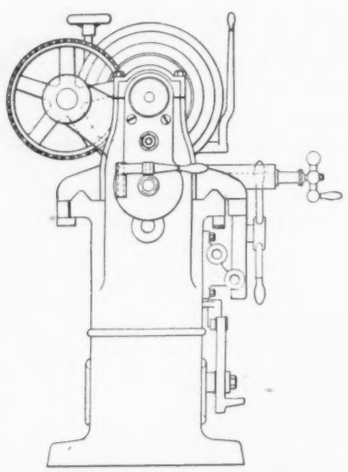


FIG. 3—REAR OF DAVIS SPECIAL TURRET MACHINE.

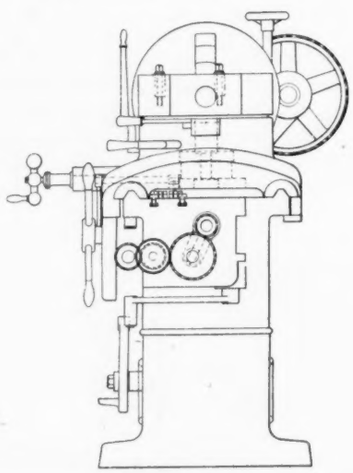


FIG. 4—END VIEW OF DAVIS TURRET MACHINE, SHOWING ARRANGEMENT OF CHANGE GEARS.

PROPOSE REGULATION.

It is reported that efforts are being made by German manufacturers to organize a world-wide tube association to regulate prices in territory in which American, German and British manufacturers are competitors. Relative to the movement, Albert Halstead, American consul of Birmingham, in giving the British views, says:

The question of establishing such a syndicate is now engaging the attention of iron and steel circles in England and Germany. The exports of tubes, and pipes from the United Kingdom in 1906 amounted to 295,000 tons, as compared with 218,000 tons in the preceding year, while the exports from Germany for 1906 amounted to 72,000 tons, as against 73,000 tons for 1905.

The exports from the United States reached 142,000 tons in 1906. These figures demonstrate that the exports from the United Kingdom are largely in excess of the exports from the United States and Germany, and it would appear injudicious for the British tubemakers to enter such a syndicate as would probably weaken their position and strengthen that of their rivals.

BROWNING SLAG HANDLING PLANT.

The accompanying illustrations show a slag handling plant on which United States patent 861,803, has been granted to Victor R. Browning, Nottingham, O. The object of the invention is a plant by means of which slag can be quickly cooled and then economically removed from the blast furnace.

The essential feature of the invention is the slag pan shown in Fig. 1. This is rectangular in shape and divided by transverse and longitudinal partitions into pockets, the sides of which converge to the bottom, leaving wedge-shaped spaces between the adjacent pockets. This convergence of the sides affords the proper draft in the pockets, so that hardened slag can be readily dumped when the pans are inverted, and the spaces between the pockets permit the circulation of water, so that the slag in the pockets is quickly cooled.

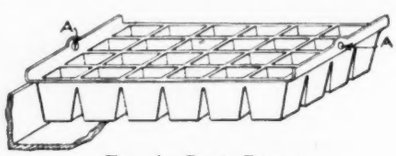


FIG. 1—SLAG PAN.

Referring to the illustration, Fig. 2, the pans are shown in positon at 1 in a cooling basin 2, the pans being supported by a flange extending around them and resting on proper supports at the edge of the basin. The flanges are angular in section, as shown in Fig. 1, and have a hole A provided at the center of the flange. The cooling basin 2 is to be supplied and almost filled with water, which is admitted through a pipe at one end and flows from the basin through a pipe at the opposite end. The slag pans are so supported in the basin as to leave a

space below them through which the water can circulate, in addition to flowing through the spaces between the pockets of the pan. The pans are placed in close proximity in the basin, so that when one pan is filled the overflow passes into the next and so on until the entire series is filled. The water circulating around the pockets quickly cools the slag therein, so that it can be loaded on a car shown in Fig. 2, which may be run in on any convenient track.

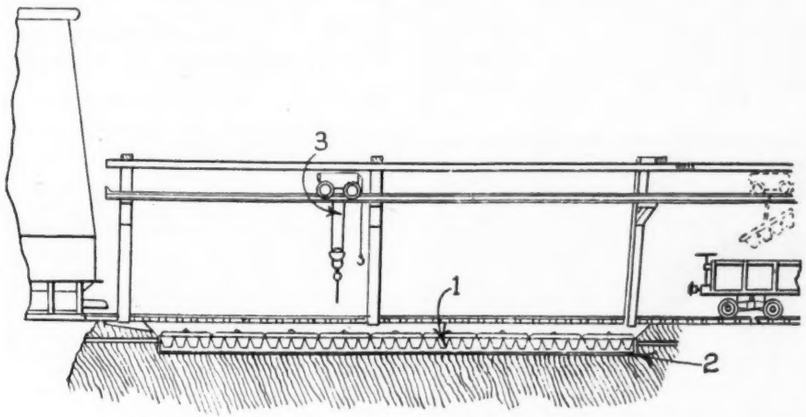


FIG. 2—GENERAL ARRANGEMENT OF SLAG HANDLING PLANT.

For the purpose of lifting and conveying the pans and the slag from the cooling basin to the car, a crane structure is provided, which consists of runways supported on trestles and which carry the trolley 3. This trolley lifts the slag pans by means of the suspended cable, which is provided with attaching hooks adapted to fasten in the holes A in the flanges, Fig. 1. The dumping may be effected in any suitable manner, but preferably by passing a dumping rope underneath the pan and hooking it at one edge. The rope passes across the opposite edge of the trolley, so that when it is taken up the pan is upset and the slag is discharged.

MR. SCHWAB'S ADDRESS.

In his address to the Merchants' Exchange of San Francisco, referred to briefly in the last issue of THE IRON TRADE REVIEW, Charles M. Schwab, president of the Bethlehem Steel Corporation, in announcing that the Union Iron Works would be improved and operated to full capacity, expressed the belief that San Francisco has a great future, but he said that conditions are abnormal, and he begged the business men to drop all their internal political strife and work together for the good of the city. In an interview, Mr. Schwab said that he could not give the details concerning the improvements to be made at the Union Iron Works, but would say that a complete system of electric cranes would be installed, and all the latest methods of work and the most modern machinery would be employed. He said that he did not expect to make money at first, or for several years, but thought he could be able to do so in time in the Union Iron Works, which are to be improved, rather than enlarged.

A SPECIAL BLISS DOUBLE CRANK PRESS.

The accompanying illustrations show a massive double crank press for the manufacture of sheet steel articles. This machine is one of eight similar presses built by the E. W. Bliss Co., 8 Adams street, Brooklyn, N. Y. They were designed for heavy punching, shearing and forming. Some interesting construction details were involved in these machines. The clutch is of the automatic jaw type with positive lock, and has three locking points. The faces of these points are of tool steel and hardened. This clutch is positive in its action and is silent either when engaged or disengaged.

The amount of space required by the press is considerably decreased by the location of the pulleys at the back of the press. In Fig. 1 at B, are shown the bottom knockouts operated by the slide through two connecting rods. The adjustment for these knockouts is made by means of the screws CC. The slide has an unusually long bearing in the frame, and is made adjustable by means of two

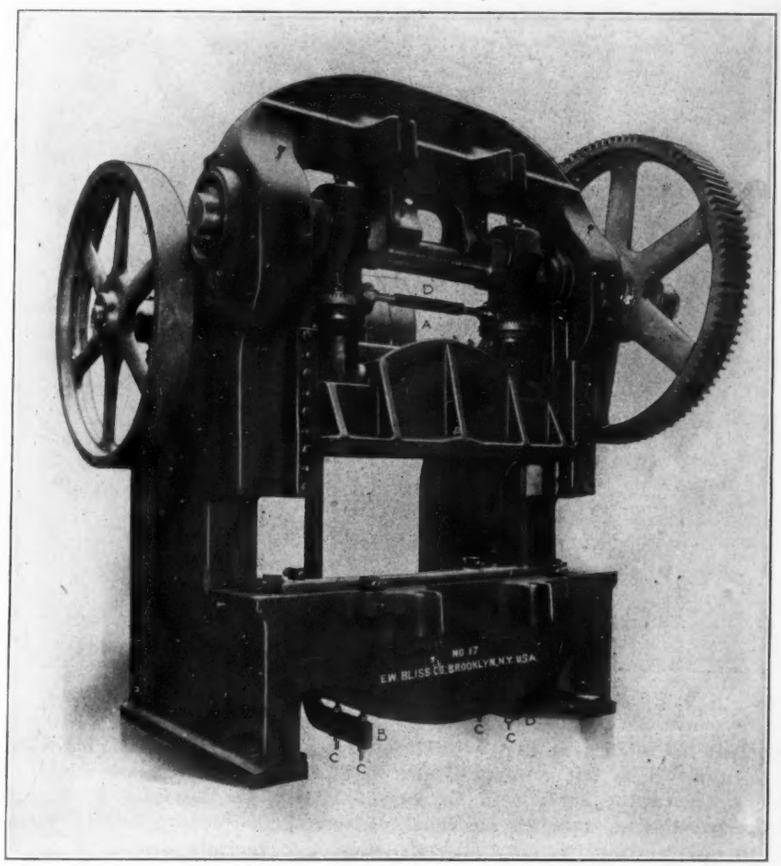


FIG. 1—FRONT OF SPECIAL CRANK PRESS.

screws operated simultaneously by bevel pinions on the shaft D, Fig. 1. This arrangement insures at all times perfect alignment of the mandrel in relation to the bed.

A special feature is the safety coupling on the back of shaft A, Fig. 2. This operates to prevent injury to the press, when through carelessness or otherwise, a wrench or bar, or some foreign article is left on top of the die, or when the cross head is not properly adjusted, or when the clutch is tripped when partly formed work has not been properly placed in the die. The starting of the press, under these conditions, may cause either a broken press body or the breaking of the tools. The safety coupling prevents the occurrence of accidents of this character.

The principal dimensions of the machine are shown in the following table:

Total height	137½ inches
Width of bed	24 inches
Length of bed	97 inches
Stroke	8 inches
Distance between bed and bottom of slide	25½ inches
Crank shaft, diameter	7½ inches
Flywheel, diameter	60 inches
Flywheel, face	8 inches
Flywheel, weight	2,000 pounds
R. P. M. of flywheel	195
Total weight of press	47,000 pounds

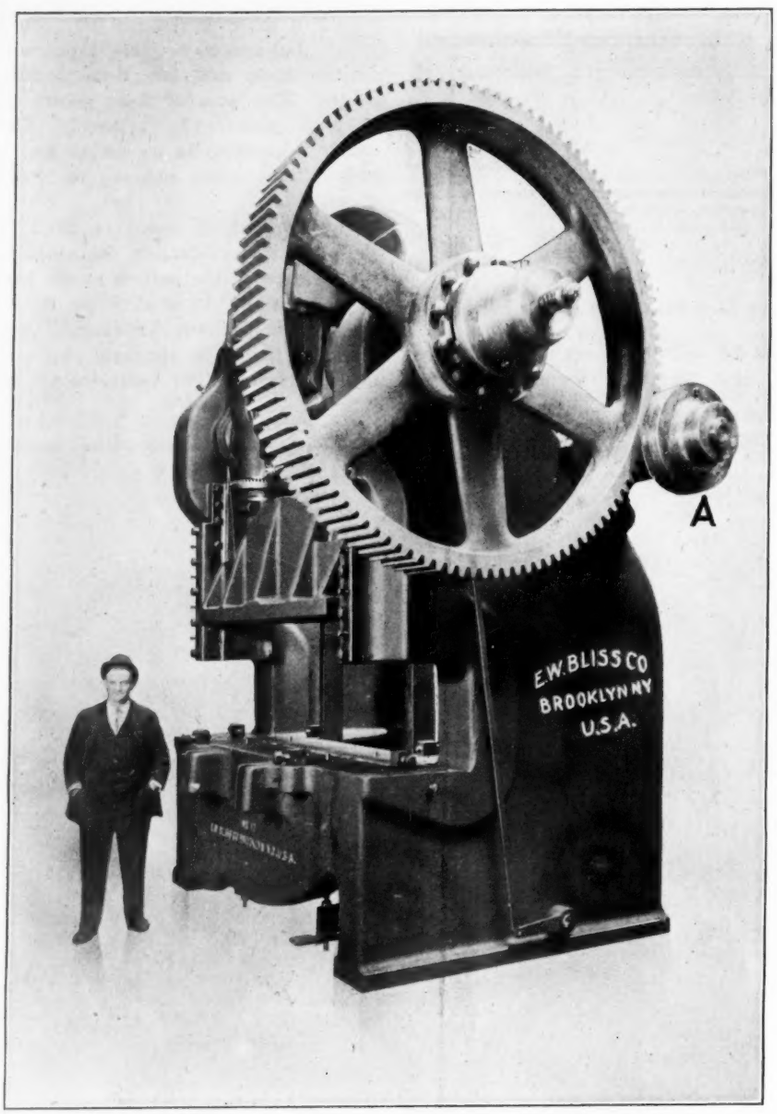


FIG. 2—SIDE OF SPECIAL CRANK PRESS, SHOWING SAFETY COUPLING.

NO DELAY IN SHIPMENTS.

The Syracuse plant of the H. E. Mills Mfg. Co., Syracuse, N. Y., manufacturer of foundry supply specialties, was recently destroyed by fire. The plant was fully insured and will be immediately rebuilt and will be ready for operation shortly after the first of the year. Shipments will, however, not be delayed, inasmuch as this concern is now operating plants at Cleveland and Milwaukee, where orders will be filled.

BOOK REVIEW

"The Romance of Steel—The Story of a Thousand Millionaires."—By Herbert N. Casson. 6 x 8½ inches. 376 pages. Published by A. S. Barnes & Co. Furnished by the Penton Publishing Co., $2.50 for cloth, or $5.00 for half leather, gilt top boxed.

This is the publication in book form of the series of articles which originally appeared in *Munsey's Magazine*, and attracted much attention. When Mr. Casson says in his preface that "it is a story of the electric expansion of a business from bankruptcy to billions," he gives an excellent idea of the style of language which abounds in the volume. There is a striking tendency to seek alliterative expressions and catch words which would hardly be expected in a history of a great business. The man who turns to this volume with the expectation of finding a history of the progress of the business from a technical standpoint will be disappointed, for there is little technical information in its pages. In spite of this fact and of its inaccuracies, there is, however, a vast amount of interesting information, which has been collected as a result of much time and diligent research among the men now living who have spent their lives in the steel business. The story is written in a kindly spirit to those to whom the book is dedicated—"the men who made the United States the foremost steel-making nation in the world." It abounds in anecdotes and is not without historical value. Mr. Casson begins his story with the birth of the Bessemer process, giving an account of the struggles of Kelly and Bessemer, and their rival claims. He then tells of the unique career of Capt. William R. Jones, ending in his tragic death. Mr. Casson next takes up the discovery of the great ore ranges, telling of early failures and later triumphs. Considerable space is naturally given to Mr. Carnegie, beginning with his career as a boy, continuing through his adventures as a company promoter and his entry into the iron business; his financial difficulties and his great successes. Mr. Casson also dwells at length upon the remarkable career of Henry Clay Frick, and does not overlook the workmen partners of Andrew Carnegie. An account of the organization and progress of the United States Steel Corporation; a very readable chapter on Pittsburg; brief accounts of the progress of steel making in Alabama and Colorado; and a discussion of the future of steel are features of the book.

MORE FAVORABLE

ARE OPERATIONS OF ALLIS-CHALMERS CO.

Increased Profits Shown in Recent Quarter Despite Unchanged Deficit of Fiscal Year.—President W. H. Whiteside Re-elected.

An unchanged deficit in operations over that of the previous year is shown by the sixth annual report of the Allis-Chalmers Co., for the fiscal year ended June 30, 1907. The operating deficit for this period was $387,298, against $388,422 in 1906, but the deficit of the year just closed was reduced to $229,817 by the standing surplus of $157,481 at the close of the previous fiscal year.

The consolidated profit and loss account for the year ended June 30, 1907, compares with previous periods as follows:

	1907.	1906.	1905.†
Profit on operation	$1,226,242	$ 648,161	$1,146,981
Maint. dep. int., etc.	1,613,540	1,036,583	1,077,999
Operating deficit	$ 387,298	$ 388,422	$ *68,982
Previous surplus	157,481	545,903	624,835
Deficit	$ 229,817	*$ 157,481	*$ 693,817
Special exp.	.....	.....	345,528
Profit & loss deficit	$ 229,817	*$ 157,481	*$ 348,289

* Surplus.

† For fourteen months ended June 30, 1905, including the receipts of the Bullock Electric Mfg. Co. for the sixteen months ended June 30, 1905. The balance of $624,835 brought forward is as of April 30, 1904.

In submitting to President W. H. Whiteside the consolidated balance sheet of the Allis-Chalmers Co. and the Bullock Electric Mfg. Co., H. Woodland, second vice president and treasurer, and W. A. Thompson, comptroller, comment as follows:

Following the established practice of the company, all expenditures during the year for repairs to and replacement of standard patterns, also for the general up-keep of the plants, amounting to $854,503.32, together with $253,987.42 for depreciation of property, a total of $1,108,490.74, have been deducted in arriving at the net manufacturing profits. In addition to this substantial sum we have also reserved in the accounts and charged against the operations during the year $73,000 for bad and doubtful accounts, etc. Losses for the year on account of bad debts amount to about one-twentieth of one per cent.

The most important transactions of the year reflected in the balance sheet relate to the bond issue. Of the $15,000,000 authorized, $12,854,000 have been issued, $854,000 of which were to reimburse the company for expenses incurred by additions to the West Allis extensions, being a part of the $3,000,000 of bonds reserved for specific purposes. Of the $12,854,000, $2,398,000 are treasury bonds, leaving a net amount of $10,456,000 taken by stockholders and the syndicate. The stockholders' subscriptions had been fully paid at the close of the fiscal year, but there were still outstanding the last two installments of the syndicate, both of which have since been paid, thus fully discharging the syndicate's obligations to the company.

The general balance sheet, as of June 30, 1907, compares with those of June 30, 1906, and June 30, 1905, as follows.

	June 30, 1907.	June 30, 1906.	June 30, 1905.
ASSETS.			
Disc. & com.	$ 2,614,000	.....	.....
Real est., etc.	37,028,121	34,401,752	30,535,770
Bills & accts receivable..	4,650,098	4,449,185	3,628,778
Mds mat etc.	8,739,354	5,437,121	3,478,725
Cash	889,828	1,151,153	516,483
Bullock Elec. mfg. develop & patents.	1,115,742	662,322	.....
Bds & shrs..	254,200	255,700	765,000
Unpd bd sub..	1,057,920	.....	.....
P & L def..	229,817	.....	.....
Total	$56,579,080	$46,357,233	$38,324,756
LIABILITIES.			
Cap stk pf..	$16,150,000	$16,150,000	$16,150,000
Com. stock..	19,820,000	19,820,000	19,820,000
Accts. pay..	2,815,226	1,559,417	1,080,951
Mtgs. due...	10,456,000	.....	.....
Notes pay...	4,873,432	6,460,000	.....
Deprec. & Res	1,293,822	1,039,835	815,388
Bull El. ...	1,170,600	1,170,500	110,128
Surplus ...	.....	157,481	348,289
Total	$56,579,080	$46,357,233	$38,324,756

Present Operations Favorable.

Supplementing the report, President Whiteside submitted the results of the company's operations for the first quarter of the fiscal year ended June 30, 1907, and in connection therewith presented the report for the first quarter ended Sept. 30, 1907, of the present fiscal year. Says President Whiteside: "These figures show steady and substantial improvement since April, 1907, at which time the company first began to receive benefits from the newly developed lines of machinery built in its enlarged West Allis plant, provided therefor, the net earnings in excess of all fixed charges for that period having been $489,268."

The detailed quarterly reports are as follows:

QUARTER ENDED JUNE 30, 1907.	April.	May.	June.	Total.
Gross prof.	$228,660	$268,893	$282,724	$750,277
Less gen'l. exp. int. on bonds, etc	191,261	199,475	189,183	579,919
Net prof.	$ 37,399	$ 69,418	$ 93,451	$200,358

QUARTER ENDED SEPT. 30, 1907.	July.	Aug.	Sept.	Total.
Gross prof.	$270,451	$289,745	$292,640	$852,836
Less exp. int. on bds etc.	189,449	188,045	186,432	563,926
Net prof.	$ 81,001	$101,700	$106,208	$288,910

President's Report.

Reviewing the company's operations over the fiscal year just ended, President Whiteside reports to the stockholders as follows:

During the past year much attention has been devoted to systematizing the work of the engineering department; improving and simplifying standard designs, thereby reducing cost of production and installation without impairing efficiency or sacrificing quality; perfecting new designs, which has greatly taxed our own facilities for several years as indicated in previous reports; and at the same time effecting economies and that close co-operation with the other departments so necessary to a proper conduct of the business.

Development work in our several new lines of machinery, namely, gas engines, hydraulic turbines, steam turbines, turbo-generators, induction motors, transformers, etc., has been carried to practical completion, and has been extraordinarily large because of the wide range in the standard sizes and types adopted. The uniformly successful results that have been attained in practical operation, and demonstrated by various tests, are gratifying in the extreme, and it may be safely stated that the accomplishments of the past year mark an important step in advancing the engineering reputation of your company and strengthening its position in the trade.

In order to protect our new and important designs in machinery and auxiliary devices, numerous applications have been made for letters patent covering many novel yet valuable features. A larger number of patents than ever before has been issued to the company, and healthy activity in this direction is manifest throughout the entire engineering organization.

The past year has been marked by a very considerable increase in the sale of the products of the electrical and steam turbine departments, in connection with the sale of our other products to regular as well as to many new customers. Thus we have introduced our electrical apparatus and steam turbines where other types were used exclusively.

Steam Turbines.

Probably the most important work which has been brought to a commercial consummation has been in the development of our steam turbine units, the unique features of which are fully protected by various patents owned by the company. In 1903 we designed and built our first turbo-generator, and its detail has required no material change—a strong testimony to the scientific accuracy of the principles first adopted. It is asserted with confidence that our turbo-generators are the best designed and most efficient machines on the American market. Sizes ranging from 500 to 7,500 kilowatt have been completed and tested, and the success of these units under actual operating conditions is thoroughly established.

Notwithstanding our recent advent into this field our sales of steam turbines have already reached nearly 100,000 kilowatt normal capacity, and compared with the previous year show in orders booked an increase of $800,000.

Gas Engines.

In this important branch of our business substantial progress has been made. Each of our standard sizes

has been designed, constructed and installed during the year, and our first gas engines are in successful operation. Orders to Aug. 1, 1907, for the horizontal, twin-tandem and double-acting type of gas engines, ranging in capacity from 500 to 5,000 horsepower, aggregate 189,350 horsepower. One of our notable contracts covers the electrification of a steel plant requiring gas engine electrical units of an aggregate capacity approximating 60,000 horsepower. This order is believed to be the forerunner of a great many others of similar character, because of the great saving effected by this means in the utilization of gases produced in the manufacture of steel and hitherto wasted.

Another important contract, which has been awarded us by an electric railway company, is for traction purposes, the largest installation in America of electrical units driven by gas engines to operate on producer gas. The equipment comprises three horizontal, twin-tandem gas engines of 1,500 horsepower each, direct-connected to 1,000 kilowatt, 3-phase, 25-cycle alternators of our manufacture and includes all sub-station apparatus.

Hydraulic Turbines.

Although we have but recently undertaken the manufacture of hydraulic turbines, we installed and placed in operation during the year 10 complete hydro-electric plants, having a combined output of 105,000 horsepower, and it is gratifying to report duplicate orders from the largest companies interested in these plants. Particular reference is made to the highly satisfactory performance of a 32,000 horsepower installation furnished one of the largest water-power developments in the south, for which we have recently contracted to supply six additional units of identical design.

Air Brakes.

This department was organized about July 1, 1906, to exploit the sale of air brake equipments, pursuant to an arrangement made with N. A. Christensen, inventor, whereby your company possesses the exclusive patent rights to manufacture and sell the "Christensen" air brakes to urban and interurban electric railways. The "Christensen" brake has been extensively used for years, and its merits are widely recognized. A reasonable degree of success has already rewarded our efforts to establish ourselves in this line of business.

Electrical Apparatus.

During the past year we have completed the development and manufacture of a considerable number of alternating current and direct current generators, rotary converters, induction and direct current motors in all sizes and capacities, transformers for both power and lighting service, street railway motor equipments and electric hoists; all of which are in successful operation.

Steam Engines.

It is worthy of note that notwithstanding the large inroads made by the steam turbine and gas engine, our Corliss engine business continues in steady volume, particularly for the medium and smaller sizes.

Pumping Engines.

Standardization of the products of this department has been carried to a greater degree than ever before, securing for our pumping engines the same manufacturing and commercial advantages applicable to power engines.

In flour mill, saw mill, mining and crushing and cement machinery a steady growth is reported.

Foreign Department.

Foreign orders booked show an increase of 45 per cent over the previous fiscal period. Arrangements have been concluded during the past year for a more systematic and energetic exploitation of our products in foreign countries, particularly Japan, China and South America.

Results.

The joint report of the treasurer and comptroller, presenting the consolidated balance sheet with profit and loss account, is submitted herewith.

The results for the year have not been as satisfactory as expected, due to a combination of circumstances beyond our control, including the general strike of molders throughout the country; the failure of contractors to complete buildings on time; the delayed delivery of equipment for the new shops; and the large expense contingent upon the organization of the new plant and necessary development of new lines of manufacture. On the other hand, such improvements in methods have been effected that with an increase to over 9,000 in the number of workmen, being more than 38 per cent for the year, the rate of production per employe per annum is now over $2,000.

Beginning with the last quarter of the year most of the adverse conditions had been overcome and the company entered an era of steadily increasing net earnings, which have continued during July and August of this year. This important result, with the before-mentioned development and growth, the eminent position of your company in many lines, and the large volume of orders on hand, aggregating over $15,478,000 on June 30, 1907, is evidence of future prosperity.

Great credit is due our engineering and manufacturing departments for their hearty co-operation and successful work, which has been faithfully performed under unusual and very trying circumstances. I desire also to express, with high commendation, my appreciation of the loyal and efficient services of all department and district managers and salesmen.

Officers Re-elected.

At the annual meeting of the stockholders of the company at Jersey City, Charles MacVeagh, of New York, who was added to the board of directors in September, was re-elected for a term of three years, together with the following five old directors: William W. Allis, Lahman F. Bower, of Milwaukee; Elbert H. Gary, William A. Read and Cornelius Vanderbilt, of New York. At a subsequent meeting of the directors all the old officers were re-elected.

WORKS CHEMISTS UNITE IN "CRUCIBLE CLUB."

Ironton, O., Oct. 29.—A meeting of the iron and cement chemists of the Hanging Rock region and the Central Ohio valley, was held at the New Ironton hotel Saturday evening, Oct. 26, for the purpose of organizing for educational and social purposes. Thirteen chemists were in attendance. The new organization will be known as the "Crucible Club" and its promotor, Phillip Hayward, chemist at the plant of the Hanging Rock Iron Co., Hanging Rock, O., is the chairman and only officer. The club will have the unique distinction of operating without by-laws, charter or dues. At the meeting to be held Nov. 30, at the same place, papers will be read on the subjects "First Aid to the Injured," "Manganese in the Ladle," "Phosphorus in Bessemer Steel" and "Native Ores."

Those who attended the initial session of the club were: James F. Peters, Culbertson, O., with the Bird Iron Co.; Robert J. Serey, Ashland, Ky., with Norton Iron Works; C. E. Bradshaw, Ashland, Ky., with Ashland Iron & Mining Co.; T. D. Pfenning, Superior, O., with Superior Portland Cement Co.; W. M. Barnett, Ironton, O., with Ironton Iron Co.; Floyd Barber and Guy S. LaForge, Ironton, O., with Ironton Portland Cement Co.; E. H. Graf, Portsmouth, O., with Portsmouth Steel Co.; L. R. Simpson, Ironton, O., recently with York Portland Cement Co., Portsmouth, O.; John Blank, Superior, O., with Superior Portland Cement Co.; Carl C. Lynd, Ironton, O., with Belfont Furnace Co.; Phillip Hayward, Hanging Rock, O., with Hanging Rock Iron Co.; D. H. Morgan, Jackson, O., with Jackson Iron & Steel Co.

The following chemists have signified their intention of becoming identified with the new organization: Joseph C. Harding, Wellston, O., with the Wellston Iron & Steel Co.; H. L. Clay, Jackson, O., with the Star Furnace Co.; Robert Barringer, Ironton, O., with Malleable Iron Co.; and Clarence Grant, Ironton, O., with Marting Iron & Steel Co. A number of other chemists in the district are also expected to affiliate with the club.

W. H. WHITESIDE, PRESIDENT ALLIS-CHALMERS CO.

Milwaukee, Wis., Oct. 28.—Walter H. Whiteside, who has been re-elected president of the Allis-Chalmers Co. for a third term, is a grandson of Madison Whiteside, a pioneer manufacturer and business man of Indiana. He entered upon life as a member of one of the wealthiest families of that state, but financial reverses in 1873 made it necessary for him to seek employment, at a time when his education had not progressed beyond a common school training, and a year in a normal school. At 17 years of age, he became an apprentice in the machine shops of the Wabash road at Wabash, Ind., his birthplace. At 20 years of age, he began introducing throughout Indiana and Michigan the Hercules dynamite and other explosives made by the Dupont Powder Co. for use in railroad, mine and quarry work, and he is credited with originating the idea of using explosives to clear away stumps on land to be used for farming purposes.

WALTER H. WHITESIDE.

Beginning with 1885, Mr. Whiteside successively held executive positions with the Cleveland Electrical Co., the Gates Iron Works and the Westinghouse Electric & Mfg. Co. As district manager at Washington, D. C., he had much to do with the installation of electricity in the dry docks of the navy department.

Mr. Whiteside became identified with the Allis-Chalmers Co. in July, 1904, as general manager of sales. Three months later, he became president. He has had many difficulties to contend with since then in amalgamating the various properties of the company to a harmonious working whole, besides directing large building operations. His policies have been vigorous and effective, and his friends declare his re-election to be clearly a vote of confidence in his ability to bring about satisfactory results.

The Logan Construction Co. plant Chillicothe, O., has closed temporarily.

SLACKENING TRADE

Causes Reduction of Canadian Working Forces—Quebec Bridge Engineer Questioned.

(Special Correspondence.)

Toronto, Oct. 27.—There is a decided slackening of activity in the iron and steel industries and several large establishments are reducing their staffs, the managers having decided upon a conservative policy owing to the uncertainty of the situation. The Canadian Foundry Co. has laid off about 40 blacksmiths, the men having demanded an increase of 10 per cent in wages, which the management regarded as inopportune. The Canadian Ship Building Co. is also discharging men from its yards here, as contracts are completed, and it will retain only a small force during the winter. In Montreal the output of the Angus shops of the Canadian Pacific Railway has been diminished, the staff having been gradually reduced from 7,000 to 5,000 men during the last few months. Manufacturers are preparing for a probable diminution in orders, owing to the condition of the money market, and the slackening in the building trade.

The citizens of Lacline, Que., Oct. 21, voted by a large majority to give the Imperial Locomotive & Machine Co. of Canada a bonus of $50,000, 20 years' exemption from taxation, and a reduction of 50 per cent in water rates, on condition of its building a plant to cost $2,250,000, to employ 500 men the first year, 1,000 the second, and 1,500 the third year. The company is a branch of a large English concern, F. Orr Lewis of Montreal being the only Canadian member.

The Quebec Bridge Commissioners have secured important evidence from Theodore Cooper, consulting engineer of the bridge, examined by them in New York. Mr. Cooper in reply to a question as to whether he considered there was clear indication that a fracture was imminent, and whether prompt and intelligent action would have prevented the failure, replied that in his opinion the deflection of chord 9 west, to the extent of 2¼ inches would indicate that the chord was less capable of doing duty than if perfectly straight, and that it was possible to have stayed the chord and prevented the failure of the bridge. He blamed the catastrophe on the lack of judgment and initiative of the executive officers of either company who were present or within sufficient touch to give orders. He believed that if prompt action had been taken to prevent chord 9 west from further deflection, it could have been done by three hours' work and $100 worth of timber and bolts and other defects in the compression chords and members could have been corrected at a later date and the bridge made perfectly safe. Hon. S. N. Parent, president of the Quebec Bridge & Railroad Co., when interviewed at Quebec in regard to Mr. Cooper's statement, stated that Mr. Cooper himself had full control and that Engineer McLure was Mr. Cooper's own choice of a competent man to control the work at the bridge site.

It has been feared that the financial flurry in the United States would seriously affect large industrial concerns in Canada established by American capital. So far there have been no indications of the kind. Paul H. Myler, manager of the Canadian Westinghouse Co., of Hamilton, Ont., states that its affairs are not affected by the embarrassment of the American Westinghouse companies, as it is financed on its own resources by Canadian institutions, its affiliation with the American concern being of an engineering nature. Rumors that the International Harvester Co.'s plant at Hamilton, employing 2,500 men, was likely to close down owing to the same cause, are denied by the management.

MEXICAN BUSINESS

NOT MARKED BY "BOOMS," SAYS MINISTER.

Reports of Crop Failures Exaggerated.—Mining Active.—Increase in Commerce.—Improvements at Monterey.

(Special Correspondence.)

City of Mexico, Oct. 22.—At one of the many banquets in this city during the recent visit of Secretary Root, Senor Jose Yves Limantour, Mexican minister of finance, was present. In one of his addresses the minister called attention to the peculiar characteristics of his countrymen in their methods of conducting business. When so many eyes are turned upon this country by foreigners with capital to invest, and by manufacturers who desire to find new markets for their products, the time is an opportune one in which to emphasize the difference which exists between business as carried on here and the system followed in some other countries. Said Senor Limantour:

"Mexico at the present time is not a country exclusively engaged in mining and farming, but also carries on an extensive commerce and possesses fairly prosperous manufacturing industries. There are many lines of activity demanding industry, intelligence and capital, and there is an ample field for the utilization of all elements of that nature coming to us from abroad, but a point which all persons interested in Mexico's business affairs will do well in realizing is the honesty, and prudent habits which characterize transactions in this country. Booms and bluff are exotic plants which can with difficulty be acclimated here, and speculative combinations rarely enter into the calculations of the merchant."

To illustrate his point the minister referred to the periods of depression from 1892 to 1894, when, following a series of bad crops, the country was visited by an epidemic, and in the course of a few months depreciation in the value of silver cut the gold value of our currency in half.

"Notwithstanding these calamities," continued the speaker, "we continued to meet our debts with religious punctuality, and it was noted with surprise that not a single failure of importance occurred in any part of the republic."

In view of the foregoing remarks, the statement that at the present time the Mexican crop prospects are of a very discouraging character should not create in the minds of people abroad doing business in this country a feeling of undue alarm. It is, unfortunately, true that reports of the most sensational nature in regard to existing agricultural conditions in the northern states have been sent to Washington by United States consuls and commercial agents resident in Mexico. While there is a basis for these reports, the rains having been very scanty in several states, in the main they are grossly exaggerated.

Activity in Mining.

Although this year the agricultural outlook is far from encouraging, the mining industry is being carried on with great activity and with unusually favorable results and is continually advancing to a higher plane of scientific prosecution by the adoption and installation of the most advanced inventions in machinery, tools and auxiliary appliances. Electricity is being employed for power and other purposes in the larger mines wherever it is available. The shipments of special mining machinery from the United States are constantly increasing. As an indication of the activity in this field it may be said that from Jan. 1 to June 30, of this year the government issued over 2,600 titles covering more than 40,000 claims. A project is on foot among mining men to establish at some point in the republic "a permanent, scientific, industrial and mineral exhibit of the mines of Mexico."

The only unfavorable factor in the industry is the recent fall in the price of copper, which has caused some of the copper-producing properties, notably the mines of the Velardena Mining & Smelting Co., near Torreon, to partially suspend operations temporarily.

Foreign Trade.

In the fiscal year 1906-7 the aggregate value of Mexico's imports was $230,363,388.85, against $220,004,755.00 in the preceding fiscal year, an increase of $13,358,633.85; the value of the exports was $248,018,010.00, in comparison with $271,138,809.32, a decrease of $23,120,799.32. Among the imports was machinery valued at $27,735,743.65. The three leading countries from which the imports came were: United States, $146,376,585.60; Germany, $24,429,252.80; Great Britain, $23,592,823.23.

Demand for Structural Steel.

According to a statement recently made by the local representative of the United States Steel Products Co., "the steel trade in Mexico, particularly in the structural trade, is beginning to pick up." There is a good deal of activity in building in the capital as well as in other large cities, and not only is the steel frame coming more into vogue, but steel is being freely used both in foundations and in combination with other materials in various ways, thus enlarging its sphere of usefulness in building operations and increasing its sale.

Monterey Works Busy.

Mexico's only steel manufacturing plant of importance, that at Monterey, is reported as being very busy just now. One of the leading local journals under date of Sept. 25, has the following somewhat extended notice of the operations at the works:

The affairs of the Monterey Iron & Steel Works are looking up very considerably, and by the cession of its coal properties to the new Compania Carbonifera del Norte, it comes into possession of $8,200,000 paid-up stock, which is so much capital available for increasing its plants with the corresponding increased production of iron and steel in all their varied forms.

The exploitation of the works is now proceeding satisfactorily. The Bessemer furnace just started is running perfectly and giving splendid results. The company has had considerable trouble to procure the raw material for the furnaces on account of the shortage of freight cars on the railways, and this compelled it to suspend from May to August last. But it has now a sufficient stock of materials and coke on hand to be sure of running at least until the end of the current year, and arrangements are in progress for the acquisition and transportation of ample materials for continuing in full run without interruption thereafter.

The plant is now actually producing from 150 to 200 tons of iron and steel daily. With the improved car service by the railways, and running the Bessemer furnace, the production is expected very soon to reach 400 tons daily. The orders for iron and steel in many forms are far in excess of the production capacity.

The demand for commercial iron has been steadily increasing, and of the actual production fully 80 tons daily consist of this iron, which is shipped to all parts of the country, and a very large proportion to the City of Mexico. It is estimated that the production of 1907 will amount to not less than 50,000 tons of iron and steel, and in 1908 to fully 80,000, as compared with 30,000 tons produced in the year 1906.

The Mexican International Railway Co., an adjunct of the National Lines of Mexico, has about completed extensive additions and improvements in its shops at the road's terminal in Durango. These betterments include new buildings and machine shop equipment, and the installation of electric power apparatus.

Stocks Pass Through a Stormy Week

Following a turbulent week in which financial history was made and all records for genuine panicky sentiment in recent years exceeded, the stock market closed with a more confident tone and with a good recovery from the lowest prices. The past week has been a memorable one in securities, as well as business in general, and there has been the need of strong hands to surmount the crisis. These have not been lacking and with the aid of the government funds through Secretary Cortelyou, the storm seems to have been weathered. The most demoralizing break in stocks in the present fall of prices, continuing since December, 1906, has been the result of the week's disorder. From the opening of Tuesday morning to the close of Thursday night, the average price of 20 active railroad stocks declined 7.41 per cent, and the average is now 53 points below last December. The average price of railroads has receded below any point since 1900 and in industrials a similar situation has prevailed, with breaks ranging as high as 60 points and reaching the lowest level since 1904. Due to the company's embarrassment from the stringent financial conditions, Westinghouse Electric lost 60 points within the week, while the Air Brake stock, in sympathy, dropped 18 points. New York Air Brake declined 23 points. United States Steel stocks displayed great strength in the face of the market's weakness, both common and preferred, gaining 1½ points. A loss of 1⅝ points was shown in bonds, however. With ready cash in most urgent demand, call money rates at one time in the week exceeded 100 per cent, the highest rate since December, 1905, and averaged practically 50 per cent. Time loans also reflected the financial stringency, averaging 7 per cent, but the last half of the week was absolutely without any loans whatever of this character. The drain upon the banks for ready money within the period under review is shown by the New York bank statement. The total cash reserves were reduced $12,900,000, changing the surplus of $11,182,650 to a reserve deficit of $1,233,300 at the present time. This deficit compares with a reserve surplus of $5,673,675 a year ago, and a surplus of $12,430,000 two years ago. The loan account was expanded $10,854,700, and withdrawal of deposits was $1,939,000. A considerable investment buying developed from the alluring prices of the week, the total sales on the New York exchange being 4,964,740 shares, against 4,813,890 shares last week, and 4,377,400 shares the corresponding week of last year. United States Steel stocks commanded a good demand, sales being 509,200 shares common, and 215,600 shares preferred. In bonds, exclusive of government bonds, sales of the week aggregated $17,750,000, against $10,291,000 last week, and $7,565,000 the corresponding week of last year.

THE LEADING INDUSTRIAL SECURITIES.

	Clos'ng Quo Oct. 26	Changes in Week	Date 1907 Ann. M't'g	Stock Outstanding	Dividend Basis	Dividend Last Declared	Dividend Date Last Div. Pay.
Allis-Chalmers	5¾	− ¾	Sept. 5	19,820 000	.....	.....	.....
Allis-Chalmers pr	14	−1		16.150 000	7 cum	1¾ Q.	Feb., 1904
American Can	4	+ ½	Feb. 7	41.233.300	.....	.....	....
Am. Can pr	36	−6⅜		41,233,300	7 cum	1¾ Q.	Oct , 1907
Am. Car and Fdy	26¾	−2	June 27	30,000.000		1 Q	Oct., 1907
Am. Car and Fdy pr	83½	+ ½		30,000,000	7 n. c.	1¾ Q.	Oct., 1907
American Loc	37¾	−6¾	Oct. 5	25,000 000	5	1¼ Q.	Aug., 1907
American Loc. pr	88	−3		25,000,000	7 cum	1¾ Q.	Oct., 1907
American Ship	55	.....	Oct. 2	7.000.000	4	3	Sept. 1907
American Ship pr	99¼	.....		7,900.000	7 n. c.	1¾ Q.	Oct., 1907
Am. Steel Foundries	5	− ½	Oct. 1	15,810,000	.....	.....	....
Am. Steel Foundries pr	23	−3		17,240,000	6 cum	2½	Aug., 1904
Barney & Smith	65	.....	June 4	2,000.000	4	1 Q.	Sept ,1907
Barney & Smith pr	128½	.....		2,500 000	8 cum	2 Q.	Sept.,1907
Bethlehem Steel	10½	− ½	April 2	14.862.000	.....	.....	.....
Bethlehem Steel pr	29	−1¼		14,908,000	7 n. c.	¾ Q.	Feb., 1907
Cambria Steel	24⅞	−1¼	March 19	45,000,000*	6	1½ S. A.	Aug., 1907
Cambria Iron	43	−1½		8,468.000*	4	2 S. A.	Apr., 1907
Chicago Pneumatic Tool	31	−3¼	Feb. 18	6,145 800	4	1 Q.	Oct., 1907
Colorado Fuel	34¼	.....	Oct. 21	34.235,500		3½	Apr., 1902
Crucible Steel	6	.....	Oct. 16	24,578.400	.....	.....	.....
Crucible Steel pr	55¾	−2½		24,436.500	7 cum	1¾ Q.	Oct., 1907
Empire Steel	7	.....	Feb. 27	2.281,400	.....	.....	.....
Empire Steel pr	50	.....		2,500,000	6 cum	3 S. A.	July, 1906
Fay & Egan	100	.....	Feb. 19	1 000,000	6	1½ Q.	July, 1907
Fay & Egan pr	128½	.....		1,000 000	7 cum	1¾ Q.	Aug., 1907
General Electric	103¼	−3¾	May 14	65,167.400	8	2 Q.	Aug., 1907
Harbison-Walker	14½	−1	Jan. 21	18,000,000		½	Oct., 1907
Harbison-Walker pr	69½	−3½		9.600,000	6 cum	1½ Q.	Oct., 1907
International Pump	11	−5	June 4	17,787,300		1	Apr., 1905
International Pump pr	60	- 3		13,835,000	6 cum	1½ Q.	Aug., 1907
Lackawanna Steel	34	−1	March 13	34.971.400	.....	.....	.....
Lake Sup. Corp.	5½	.....	Oct. 2	40,000,000	.....	.....	.....
New York Air Brake	65	−23	June 18	10,000,000	8	2 Q.	Oct., 1907
Niles-Bement-Pond	130	.....	Feb. 6	5,000,000	6	1½ Q.	Dec., 1907
Niles-Bement-Pond pr	105	.....		2,000,000	6 cum	1½ Q.	Aug., 1907
Otis Elevator Co	22	−3	March 18	6,375 500		1½ S. A.	Oct., 1907
Otis Elevator Co. pr	74	−1		6,449,500	6 n. c.	1½ Q.	Oct., 1907
Penn. Steel	50	.....	May 13	10,750,000	.....	.....	.....
Penn. Steel pr	90	−7½		16,500,000	7 n. c.	3½ S. A.	May, 1907
Pittsburg Coal Co	8	−1	Feb. 11	28 297.660	.....	.....	Nov., 1906
Pittsburg Coal pr	39	−6		27,248,800	7 c.	3½	Apr., 1905
Pressed Stl. Car	18¼	+ ¼	Feb. 20	12.500,000		3	Aug., 1904
Pressed Stl. Car pr	70	+1		12.500.000	7 n. c.	1¾ Q.	Aug., 1907
Pullman	139	−9	Oct. 17	100,000 000	8	2 Q.	Aug., 1907
Railway Stl. Spring	23½	−4½	March 7	13.500,000	4	2 S. A.	Oct , 1907
Railway Stl. Spring pr	76	+1		18,500.000	7 cum	1¾ Q.	Sept.,1907
Rep. Iron & Steel	14½	−1¼	Oct. 16	27,191,000	.....	.....	.....
Rep. Iron & Steel pr	54	−9		20.416.900	7 cum	1¾ Q.	Oct., 1907
Sloss-Sheffield	31	−2½	March 5	10,000,000	5	1¼ Q.	July, 1907
Sloss-Sheffield pr	83	.....		6 700,000	7 n. c.	1¾ Q.	Oct., 1907
Tenn. Coal & Iron	134	−1	May 7	29,500 000	4	1 Q.	Aug., 1907
U. S. Pipe & Fdy	18	−2⅜	June 26	12.500,000	4	1 Q.	Sept.,1907
U. S. Pipe & Fdy. pr	55	−10⅛		12.500.000	7 n. c.	1¾ Q.	Sept.,1907
U. S. Steel	23⅞	+⅛	April 15	508,302 500	2 n. c.	½ Q.	Sept.,1907
U. S. Steel pr	83⅜	+1⅛		360,231,100	7 cum	1¾ Q.	Aug., 1907
U. S. Steel 5's	88⅛	−1⅝		463,798 000	5	5 A.	.....
Va. Iron, Coal & Coke	32	−8	Sept. 17	8.641.600	.....	.....	.....
Westinghouse Elec	49	−60	July 24	24 998.700*	10	2½ Q.	Oct., 1907
Westinghouse Air Brake	133	−18	Oct. 1	11,000,000*		5 Q.	July, 1907

Par value of shares, $100, except those starred (*), $50.

Copper Stocks.

Boston.—Butte Coalition, closed 12½, net gain in week 2⅛; Calumet & Arizona, closed 94, net gain 3; Calumet & Hecla Mining, closed 590, unchanged; Green Cananea, closed 5⅞, net loss 1⅛; North Butte Mining, closed 36, net gain 1¼; Osceola Mining, closed 73, net loss 7; Quincy Mining, closed 76, net gain 3.

New York.—Amalgamated Copper, closed 49, net gain 4⅞.

Financial Notes.

Recent dividend declarations include the following: Pressed Steel Car Co., regular quarterly dividend of 1¾ per cent on its preferred stock, payable Nov. 27; J. G. Brill Co., regular quarterly dividend of 1¾ per cent on the preferred stock, payable Dec. 14; Pennsylvania Steel Co., regular semi-annual dividend of 3½ per cent on the preferred stock, payable Nov. 1; Buckeye Steel Castings Co., 1½ per cent on the preferred stock and 1 per cent on the common stock, payable Nov. 1; Flannery Bolt Co., dividend of 5 per cent, payable Oct. 21.

NEWS FROM MANY INDUSTRIES

New Buyers:—

The Model Pattern Co., Manhattan, N. Y., has been formed by W. F. Cook, G. M. Lamb and G. H. Bladworth, New York City, to manufacture patterns, molds, models, etc. The company is capitalized at $100,000.

The King Weeder Co., Richmond, Va., capital $50,000, has been chartered to manufacture agricultural implements. The officers of the company are: T. J. King, president, and Warner Moore, secretary-treasurer.

The Rochester Rotary Pump Co., Rochester, N. Y., has been chartered to manufacture pumps, piping, etc. The capital stock of the company is $50,000, and the incorporators are: T. T. Graser, C. H. Rowland and O. H. Nestturg.

The Buchanan Foundry Co., Queens, N. Y., has been organized with a capitalization of $30,000 by G. L. Stuebner, Flushing, N. Y.; George Buchanan and Hugh Quinn, Long Island City, L. I. The company will manufacture iron and steel, steel forgings, etc.

The Pittsburg Emery Wheel Co., Pittsburg, capital $50,000, has been organized to manufacture grinding and polishing machinery. The officers of the company are: Charles G. Smith, Park building, Pittsburg, president; D. B. Hyde, vice president and works manager; Albert W. Smith, treasurer, and J. W. Hetzel, secretary.

Nicholas Beljeman, 25 Broad street; George P. MacGowan, 317 West Fifty-ninth street, both of New York; William H. Webster, Pelham, N. Y.; Thomas J. Tonor, Tarrytown, N. Y., and James A. Dailey, Ossining, N. Y. have organized the Motor Car Maintenance Co., New York, with a capital of $10,000. The company will manufacture motors, engines, etc.

The Practical Heater Co., Monroe, Mich., has been organized with a capital of $100,000 to manufacture the Johnson steam heater and ventilator system. The officers of the company are: J. W. Johnson, Toronto, president; W. C. Sterling Sr., vice president; H. D. Hoffman, Monroe, second vice president; Thornton Dixon, Monroe, secretary, and W. C. Sterling Jr., Monroe, treasurer.

The Sloat-Raney Combination Furnace Co., Cleveland, has been organized with a capital of $10,000 to manufacture a patent gas furnace. For the present the castings will be secured by contract, but later a plant may be erected. Those interested are: Louis J. Sloat, G. D. Raney, W. F. Brooks and others. The company's headquarters are at 1227 Prospect street.

John M. and Robert R. Barringer, of the Ironton Malleable Co., Ironton, O., are interested in a new company incorporated last week to put in a new industry at Zanesville. It is the Zanesville Manufacturing Co. and the capital is $10,000. The other incorporators, in addition to the Barringers, are C. T. Marshall, H. M. Douglass and J. M. Glaze. The company will manufacture iron products and their plant at Fair Oaks, a suburb of Zanesville, is about completed. Mr. Glaze is secretary of the Zanesville Malleable Iron Works.

New Construction:—

The Youngstown Bronze & Iron Co., Youngstown, O., has purchased a site in that city upon which it will begin the erection of buildings suitable to its manufacturing needs.

The Engineering Works Co., Longmont, Colo., has begun the construction of a foundry for both iron and brass work. The company owns a site of four acres upon which it will locate buildings as fast as practicable.

The Modern Mining Machinery Co., Portland, Ore., has awarded the contract for the construction of a building 90 x 100 feet, two stories, of cement blocks, in which it will engage in the manufacture of the Merrill ore pulverizer and other mining machinery.

The J. A. Oberhelman Foundry Co., Cincinnati, has had plans prepared for the complete modernization of its plant, and is contemplating to install electric power exclusively and to enlarge the present output by the construction of an addition. L. J. Deremo is consulting engineer.

The Cumberland Steel Co., Cumberland, Md., has awarded to the McClintic-Marshall Construction Co. the contract for the erection of a new building to take the place of the structure recently destroyed by fire. The new building will be considerably larger than the one destroyed.

The Jeffrey Mfg. Co., Columbus, O., has begun work upon the erection of a large one-story brick addition to one of its machine shops. The building, which will be completed some time in the spring, will enlarge the mining machinery department of the plant.

The United States Radiator & Boiler Co., West Newton, Pa., has awarded the contract to the McClintic-Marshall Construction Co., for the erection of a new fire-proof foundry building 299 x 326 feet, to replace the one recently destroyed by fire. It is the intention of the company to equip the new structure with modern machinery, cupola, gas engine, blower, etc.

The Dover Fire Brick Co., Cleveland, has awarded contracts for large extensions to its Pennsylvania plant at North Bend, Pa., which will more than double the present output. The North Bend plant was acquired by the Dover Fire Brick Co. just about one year ago and the demand for this grade of brick has been such as to compel the extensive enlargement of production at this time. The company's offices are at 509 Cuyahoga building, Cleveland.

The Roanoke Iron Works, Roanoke, Va., has been formed as a successor to the Rockhill Foundry & Machine Co. and the Roanoke Foundry & Machine Co. The operation of the foundry and machine shop will be under one management, with H. E. Obershain, formerly with the Virginia Bridge & Iron Co., as president of the company. A large well-equipped foundry and a machine shop are now in operation, and plans have been formed for the extension of both of these with the view of beginning the manufacture of machine tools, such as planers, drill presses, etc.

The Bay View Foundry Co. and the Sandusky Foundry & Machine Co., Sandusky, O., recently purchased the plant and grounds of the Standard Wheel Co. of that city. For the past three years the Bay View company has leased the foundry department of the Sandusky Foundry & Machine Co. For its portion of the ground, the Bay View company has had plans prepared by the Osborn Engineering Co., Cleveland, for the construction of a foundry, 80 x 150 feet, of steel frame with brick walls and composition roof. The foundry will be equipped with an electric traveling crane, belted generator for lights and crane, two gas engines, sand blast, tumbling barrels, rattlers, etc. The Sandusky Foundry & Machine Co. later expects to erect a modern machine shop on its division, but at this time is not in the market for any equipment, as its plans for the improvement have not fully matured.

The Bucyrus Iron Works, Bucyrus, O., with a capitalization of $50,000, has been organized and has purchased the foundry formerly operated by the Shunk Foundry Co., of that city. At the present time, the plant consists of a brick foundry building, 60 x 200 feet, with two 5-ton cranes; engine building, 30 x 40 feet; core room building, 30 x 30 feet; pattern shop and pattern storage, 40 x 70 feet, occupying a site of five acres. In the spring of 1908, the company proposes to erect a modern machine shop, but at this time the dimensions or the equipment required have not yet been determined. A line of hoisting engines and derricks and other contractors' supplies will be manufactured. The officers of the company are: W. Bright Wilhelm, president and general manager; J. E. Ferrier, vice president, and W. T. Morse, secretary and treasurer.

The Joseph Joseph & Bros. Co., Harrison avenue, Cincinnati, dealers in metals, is having plans prepared for extensive improvements to its plant. The plans provide for a new power house and the installation of new power equipment, including boilers, engines, generators and motors.

General Industrial Notes:

The Newton Engineering Co., Milwaukee, has increased its capital stock from $50,000 to $100,000.

The Gibraltar rolling mill, near Reading, Pa., has resumed operations. It had been idle for months.

The creditors of the Kemmerer Iron & Steel Co., Scranton, Pa., have filed a petition in involuntary bankruptcy in the federal court, representing claims amounting to $11,274.03. The mill is now idle.

The Goshen Iron Co., Goshen, Va., through its president, C. E. Stafford, reports that the machine tools damaged in the recent fire at their Rich Patch ore mines have been replaced. The fire was confined to a small frame machine shop and the loss was not large.

The Hisey-Wolf Machine Co., Cincinnati, manufacturer of portable electric tools, is moving into its new shops on Townsend street, Cormany avenue and the Canal, which have just been completed. The plant consists of three buildings on a lot 145 x 165 feet. The main shop is two stories in height. The offices and power plant are in separate buildings.

The Weyburn Mfg. Co., successor of the Weyburn Co., Rockford, Ill., manufacturer of steel shapes and blacksmith tools, is equipping an up-to-date plant for this line of production, which is expected to be one of the leading works of its kind in the nation. The company is extending its line and is making fitted shares and cultivator shovels in connection with its regular products.

The Wheeling Flexible Ladder Co., Wheeling, W. Va., has purchased the Cameron patents on a new flexible ladder and has equipped a plant at Wheeling for the manufacture of flexible iron ladders, fire escapes and light structural iron work. The ladder is made entirely of round iron and no nuts, bolts or rivets are used in its construction. The company also manufactures a light drop ladder, which can be folded up in a small box and can be thrown from any height affording a rigid escape.

Trade Notes:—

Pickands, Brown & Co., Chicago, announce the removal of their offices from 1134 Rookery to the Commercial National Bank building, suite 1740.

The new foundry of R. Hoe & Co., printing press manufacturers, has been equipped with three 10-ton electric traveling Northern cranes, each of about 56-foot span, and also with a No. 72 Newton cupola. The equipment was furnished by the Northern Engineering Works, Detroit.

The Duquesne plant of the Carnegie Steel Co. has just completed a large addition to the machine shop and the most modern tools and machinery have been purchased and installed. The vise equipment consists entirely of the Pittsburg high speed vises manufactured by the Pittsburg Automatic Vise & Tool Co.

The United Steel Co., Canton, O., has received an order from the Ford Motor Co., Detroit, for 3,010,000 pounds of vanadium steel, which is said to be the largest order for vanadium steel ever placed. The steel will be used for crank shafts, gears, springs, etc., in automobile construction.

The new foundry of the Clyde Iron Works, Duluth, will be operated by alternating current motors and will be equipped with two 10-ton and one 15-ton electric traveling cranes of about 40-foot span. These cranes are to be of the Northern type, equipped with alternating current motors, furnished by the Northern Engineering Works, Detroit.

The Southwestern Bridge Co., Joplin, Mo., has opened contracting offices at 806 Wilson building, Dallas, Tex., with J. I. Boggs, contracting engineer; at 317 Culbertson building, Oklahoma City, Okla., with R. X. Basford, contracting engineer; and at 726 Symes building, Denver, Colo., with George A. Sears, contracting engineer. Recent contracts taken by the Southwestern Bridge Co. are for two through plate girder bridges for the Texas Central railroad, at Waco, Tex.; for the steel work in the Allen building at Shreveport, La.; for 100,000-gallon tank and tower for the St. Louis & San Francisco railroad at Springfield, Mo.; for four additional steel buildings for the Kansas Natural Gas Co., Independence, Kans., and for bridges required on the line of the Joplin & Pittsburg Interurban railroad.

Fires:—

The plant of the Pittsburg Stove & Range Co., Allegheny, Pa., suffered a heavy loss by fire Oct. 20 with damage estimated at upwards of $50,000.

The woodworking shop of the West Milwaukee shops of the Milwaukee road were totally destroyed by fire Oct. 20, causing a loss of $100,000, fully insured.

Will Move Furnace.—The Principio furnace, near Elkton, Md., has been sold by the Whitaker Iron Co., and will be torn down and removed to Michigan, where it will be placed in shape to produce charcoal iron. The furnace for many years turned out high grade charcoal pig iron. The end of the manufacture of pig iron in Cecil county will be marked by the removal of the furnace. The first blast furnace was built at that point in 1781 by an English firm, and George Washington was once interested in the plant. In the war of 1812 cannons and cannon balls were cast at the furnace. The Whitaker company will continue to maintain at Principio its forge for the manufacture of charcoal iron blooms.

New York Skyscrapers.—A count of the skyscrapers on Manhattan Island has been made, and it shows that 540 buildings of 10 or more stories have been erected since 1890. Twelve stories is the favorite number above 10, apparently, for the building department's records show that 169 12-story structures have been built or are now under way. Maybe superstition partly explains the fact that there are only 13 13-story buildings. The Singer rises 41 stories and the Metropolitan Life, now under construction, will break the record with 48.

Robert N. Ahern, Arthur Ahern, Walter J. Ahern and others have secured a charter for the Ahern Safe Co., Montreal, Que.

TRADE PUBLICATIONS.

Rivets.—The Champion Rivet Co., Cleveland, O. 77 pages. 6 x 9 inches. This catalog contains scientific facts and other valuable information about Victor boiler, structural and ship rivets, including a series of tables showing the results of tests made on the Victor steel rivets, together with illustrations of the samples used in making these tests. The catalog concludes with a number of essays on "How to Heat and Drive Good Steel Rivets," on which prizes were awarded by this company at the regular annual meeting of the International Boilermakers' Association.

Elevating, Conveying, Mining and Milling Machinery.—The C. O. Bartlett & Snow Co., Cleveland. Catalog No. 13, 1908. 324 pages. 6 x 9 inches. Illustrates and describes the different lines of machinery manufactured by this company, including elevator buckets, screens, tanks, iron and steel, drop forged chain, excavating, mining, mixing, power transmission and coal handling machinery, etc. Each class is listed consecutively. Price lists and dimensions are also given and special attention is devoted to labor saving machinery.

Sensitive and Radial Drill Presses.—The Henry & Wright Mfg. Co., Hartford, Conn., is distributing a handsomely designed, 60-page catalog, 6 x 9 inches, describing its extensive line of sensitive and radial drill presses. Front and profile illustrations are given of the various machines, ranging from single spindles up to eight spindles, and a number of excellent halftones make clear the ball bearing feature of these drills, their belt shifting arrangement, their system of governing idlers for keeping belt at proper tension and other noteworthy features. A list is given of concerns using from one to three hundred spindles each.

Chains.—The Hayden-Corbett Chain Co., Columbus, O. 7 x 5 inches. 69 pages. This catalog presents considerable information concerning chains for all services, including straight link chains, close and stud link cable chains, logging chains, wagon chains, wrecking chains, boom chains, conveyor chains, and accessories, such as shackles, dogs, sprockets, etc. It also presents considerable information concerning chains.

Steam Turbine and Generator Sets.—The General Electric Co., Schenectady, in bulletin 4534 describes the Curtis steam turbine of the horizontal shaft type for electric generating sets up to 300-kilowatts capacity for both direct and alternating current. It can be arranged to operate either non-condensing or condensing. The generators have commutating poles and special commutator construction adapting them to continuous operation with little attention. Another bulletin also issued by this company describes the Wright demand indicator, showing the maximum output of generators, transformers, etc., on a given circuit. Bulletin 4536 describes the mercury arc rectifier for producing direct current from alternating for use in charging storage batteries and for useful commercial purposes.

Locomotive Cranes.—The Brown Hoisting Machinery Co., Cleveland, has issued catalog L, 27 pages, 6 x 9 inches, calling attention to the "Brownhoist" locomotive-crane with grab-bucket equipment, as applied to the handling of ore, coal, slag, sand, etc. Illustrations showing the cranes in service and a partial list of users are also presented.

Riveters.—The Hanna Engineering Works, 820 Elston avenue, Chicago, is sending out a folder describing and illustrating its pneumatic riveter.

Ornamental Iron and Bronze.—The Flour City Ornamental Iron Works, Minneapolis, Minn., is distributing a catalog 4 x 9½ inches, descriptive of its products, its increased facilities, etc. A list of buildings recently completed showing evidences of the work of this company, together with the names of the architects, is also given.

Steel Mine Timbers.—The Carnegie Steel Co., Pittsburg, Pa., in a catalog recently issued presents data and tables for the use of mining engineers. The catalog is 5 x 7¾ inches and contains 38 pages.

Will Move Office.—The office of General Superintendent Woodworth, of the Buffalo & Susquehanna Mining Co., will be moved from Hibbing, Minn., where it has been since the reopening of the Susquehanna mine to Iron River, Mich. A more central location is thus obtained for some properties of the company are located on the Marquette and eastern Menominee ranges, both of which are the other extremes of the iron country from Hibbing. It is also reported that the Munro Mining Co., one of the subsidiary companies has increased its capitalization from $50,000 to $100,000.

The New Process Steel Co., Marshall, Mich., a crucible steel foundry, has issued a circular inviting orders for nickel-vanadium steel castings, of high elastic limit and of great resistance to shock or wear.

FOREIGN TRADE OPPORTUNITIES.

(These inquiries from prospective foreign purchasers are furnished by American consuls to the Government Bureau of Manufactures, Department of Commerce and Labor. Those in which the addresses are omitted are on file at the Bureau of Manufactures, Washington, D. C. In applying for addresses refer to the file number.)

No. 1462. Wire fencing.—The Municipality of Vosburg, Cape Colony, South Africa, will be in the market shortly for a quantity of wire fencing, according to *The British and South African Export Gazette.*

No. 1507. Panama Canal Supplies.—The Isthmian Canal Commission, Washington, D. C., will receive bids until Nov. 4 for the furnishing of oil tanks, punching and shearing machines, water meters, electrical fixtures, rubber and leather belting, belt lacing, cotton duck, driftbolts, boat spikes, nails, corn brooms, scrubbing brushes, tackle blocks, lamps, door hardware, axes, hammers, tool handles, saws, hoes, pipe cutters, wrench frames, chisels, wire-rope clips, hose clamps, screw clamps, belt hooks, hasps and staples, wing dividers, oil cans, sash cord, polishing paste, lubricating oil, etc. (Circular No. 396.)

No. 1517. Wire nails.—An American consul in Asia Minor reports that the importation of nails into Asia Minor and wire for the manufacture of nails is very large. Although it is very difficult to ascertain the exact quantity imported each year, he has been informed that it is about 2,000 tons to one port alone. At present the greater part of the nails are imported from Austria and Belgium, and a comparatively small quantity from the United States. Small quantities are also manufactured by a local foundry, but the amount turned out is infinitesimal compared to the demand. He states that a business man called at the consulate recently and requested to be put in touch with some American firm desiring to extend its markets in this territory. He was of the opinion that if a pushing manufacturing firm is willing to try its best to compete with Europeans in this market he could obtain, by degrees a very good share of the trade.

No. 1547. Railway construction.—The Japanese government requests short term tenders for further rolling stock and permanent way material, also five steamers, and railway construction and equipment in Korea. Particulars of Minister of Communication, Tokyo, Japan.

No. 1536. Construction of street railway system.—Consul J. H. Worman, of Three Rivers, advises that sealed tenders addressed to S. J. Clarke, Esq., chairman of public works committee, Calgary, Alberta, Canada, will be received until 12 o'clock, Nov. 1: (a) For the construction of about 12 miles of street car track and overhead trolley work in the city of Calgary; (b) For building a steel bridge with concrete abutments over the Elbow river in the city of Calgary; (c) For six semiconvertible cars with electrical equipment, etc. Separate tenders will be received for each of the above. A check, payable to the city treasurer, for 5 per cent of the amount of the bid must accompany each tender. Plans, specifications, and form of tender can be obtained upon application to the city engineer's office, Calgary.

No. 1537. Railroad supplies.—A United States consul in South America states that a contract has been secured by an American for the construction of a new railroad, and adds that it might be well for manufacturers of railroad supplies, etc., to address the contractor, whose name is on file in the bureau of manufactures.

No. 1539. Panama Canal supplies.—Bids will be received by the Isthmian Canal Commission, Washington, D. C., until Nov. 12, for the supply of track-laying cars, journal jacks, motor, drain tile, iron, steel, rivets, chain, wire rope, hose, hose reels, hose nozzles, pulleys, tongs, pliers, pinch bars, wrenches, bench screws, set screws, door clamps, stocks and dies, vises, saws, shears, spades, oil stones, tallow pots, platform scales, torches, stovepipe, stencils, rules, drawer pulls, twist drills, glass cutters, oilers, screws, nails, tacks, staples, belt rivets, etc. (Circular No. 398.)

No. 1518. Panama Canal supplies.—The Isthmian Canal Commission, Washington, D. C., will receive bids until Nov. 8 for the supplying of boiler feed pumps, rowboats, whaleboats, wire rope, Portland cement, rivets, pattern letters and figures, paper, cardboard, envelopes, folders, memorandum books, carbon paper, shipping tags, surveyor's supplies, filing cases, pencils, penholders, erasers, rubber bands, desk baskets, paper clips, cuspidors, etc. (Circular No. 397.)